

The Canadian Medical Association Journal



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The Canadian Medical Association Journal

Vol. IX.

TORONTO, OCTOBER, 1919

No. 10

PRESIDENTIAL ADDRESS

BY GEORGE H. MURPHY, M.D., C.M., F.A.C.S.

Halifax

MY first duty is to express my appreciation for the honour of presiding at this, the sixty-sixth meeting of the Medical Society of Nova Scotia. It is an important post and carries with it responsibilities worthy of our best efforts. Nobody knows better than I how far short I must come of fulfilling the requirements of the office. The hurly-burly of active practice and a heavy hospital service fill in one's time and absorb one's energies so completely, that the weary plodder can do little more than touch the fringe of any work lying outside the confines of his daily toil.

It is an incident of some interest to me that my election as president of the Medical Society of Nova Scotia should synchronize with the selection of Antigonish as its meeting place. For this is my native county. And when one finds himself amid what were familiar surroundings some twenty years ago, he is apt to indulge in reflections, to dream dreams, and even to nibble at the margin of prophecy. If my remarks to you this evening then, wander at times from the strictly practical into such channels, I plead environment as excuse, and the privilege of a president to go as far as he likes from the beaten track of our work; to go forth even into the lanes and by-ways of our calling, to gather in anything he believes is escaping attention on account of its distance from the main road. If I indulge in prophecy, I plead no excuse except that boldness which braves the penalty of a prophet in his own country.

At this our first meeting after the war, I wish to extend a hearty

Delivered before the sixty-sixth annual meeting of the Medical Society of Nova Scotia, July, 1919.

welcome to the men of our profession who have returned and are returning from service overseas. To go meant personal sacrifice for some, to others exceptional opportunity, but to all it meant duty; duty enriched by a fine spirit of patriotism. The medical profession of Nova Scotia is proud of the men it sent overseas, and I feel that I am expressing the feelings of the rest of us when I say that every effort will be made to make their return to practice easy and satisfactory.

OBITUARY

My next duty is to speak a word of parting. Our obituary list for the year is a comparatively large one. We have lost Doctors D. A. Campbell, Gossip, LeBlanc, MacDonald, Burns, Chipman, MacKenzie, MacDonnell, Norwood, Morrow, Godfrey, Lannigan, and Keith. Quite a gap in our ranks. And as we hasten to close up in order to present our best front to the enemy, let us glance for a moment at the manner of men they were that have fallen. Some had barely buckled on their armour; some saw out the allotted span, and others dropped from the dangerous arches before they had passed the centre of the bridge. Lieutenant-Colonel Howard MacDonald went down with the *Llandoverly Castle*. Like others, he had heard his country's call and brought to the service that zeal and ability, which characterized the Canadian Army Medical Service and made it great.

Dr. D. A. Campbell was a former president of this Society, a regular attendant at its meetings; and whether we regard him as a doctor or a teacher, he was easily a leader in the profession of our province. I was a student of his and always had for him that affection and respect which a grateful pupils feels for an honoured and able teacher. A broad sympathetic nature combined with fine intellectual gifts eminently endowed him for the profession he adopted and honoured. He did his work well, whether by the bedside of his patient, in the lecture room of the student, or with pen or tongue setting forth the claims, or defending the cherished rights of the profession he loved so well. To him and all, this Society, representing the profession of the province, bows in respectful mourning. Departed brothers of our calling, ye have fought the good fight! Amid the storms and hardships of practice, ye have trod with firm foot the arduous pathway of duty. Now reap the reward! Former associates, close friends, and worthy physicians, *Vale*.

"There is no Death! What seems so is transition;
This life of mortal breath
Is but a suburb of the life Elysian,
Whose portal we call Death."

OUR PROBLEMS

Gentlemen, I recall from the days I read a little Shakespeare, the words Macbeth addressed to the Doctor who was treating unsuccessfully Lady Macbeth. Macbeth is in dire straits. Retributive justice is finding him out. His thanes are deserting him. His wife is dying from a mental disease due to the stress of their terribly sinful life. Macbeth knows but too well the cause of her complaint and realizes that medicines are of no avail. Angrily he says to the doctor: "Throw physic to the dogs, I'll none of it." And in a moment or two, his mind having run back over the picture of what might have been, he says in that helpless and pathetic way, which makes us sorry even for him:

"If thou could'st, doctor, cast
The water of my land, find her disease,
And purge it to a sound and pristine health,
I would applaud thee to the very echo
That should applaud again."

In referring, then, to some of our problems this evening, I may be permitted to interpret in the sense of actual disease Macbeth's lines, and apply them to ourselves. I shall only touch, however, a few of the problems which these extraordinary, and I might say perilous times, seem to accentuate.

The war did not create any new problems in the realm of medicine. It did accentuate the old ones. It brought before our eyes, as nothing else could have done, the fit and the unfit. No generalities there; a man was either physically fit to fight or he was not. If not, was it a preventible disease? Was it inherited from the parent; and if so, what facilities had the parent given him by the State and the medical profession to avoid that disease? And if unfortunately infected, did he have the best that science and a benevolent government could give in order that his cure be complete? Were it due to unhealthy surroundings and ignorance of parents in early life, what have we as a profession been doing to create conditions where children can be born right, where proper environment can wield its mighty influence in evolving and perfecting a virile manhood and womanhood; beside which all other departments of our national and social life are inconsiderate and

trivial. Every activity in our country must be vivified and re-vivified by the gush and flow of healthy human life throbbing through the arteries of that vast and complicated machinery that make up the structure of an intelligent and progressive nationality. Mr. Lloyd George, face to face with the large proportion of the unfit in Great Britain, turns to remedial reconstruction with the pertinent remark that you can't make an A-1 nation with a C-3 people.

The essential problem, gentlemen, as I understand it, relates to the public health, and in its solution our efforts must be more than ever before cast in the realm of preventative medicine. We must be the leaven, working quietly and effective in the great national paste until the whole is leavened. We must create an atmosphere so redolent of the best health interests of the whole people that our legislators shall take as naturally and ardently to legislation affecting the public health as they have in the past to promoting big industrial and commercial interests. Society, and societies, and the Churches will widen their scope in order to bring home to everyone the real significance of a sound mind in a sound body.

TUBERCULOSIS

Many of the unfit had tuberculous lesions of either the lungs, bones or joints. The medical examinations at the recruiting stations set the facts before us in a concrete way; but we knew before, from our own observation and from the health and sanatorium reports, that we have far too great a proportion of the various types of tuberculosis in our province. Perhaps in our contemplation of the evils of pulmonary tuberculosis we have not laid enough stress upon the abdominal forms and that of bones and joints. But the general practitioner, as well as the hospital surgeon, is familiar with the types and knows that the deadly black line of our tuberculosis charts includes the children that have died from joint and bone infection. There are those, too, who, recovering under treatment, are left with ankylosed joints and weakened bones, sometimes total cripples, and often with a low functional index lessening their earning power and status as members of the community and as responsible citizens of the state. I need but mention the hip, the knee, the ankle, and the bony lesions to remind you of the large number of such cases you are meeting in your practice. In the hospitals they constitute an important part of our surgical work; and as one sweats and worries over his diseased bones and ruined

joints, and foresees that the best fruits of his labour must be a crippled man or woman, he can not escape the reflection, while granting the benefits of surgical repair, that for the ideal of curing our patient we are at the wrong end of the process. We are dealing then with effects rather than causes, though I do not deny that in practice, we can do much good by working backwards. But the ideal of our profession should be to attack an inherently preventible disease by striking at the cause.

It seems to be a law of nature, whether among the units of the microscopic world, or among the larger ones of the national and social order, that once a diseased condition gets a certain headway, it is hard indeed to get it under control. It develops force as it moves and destroys; and often before the counter-attack acts upon it effectively, much harm is done. We do what we can with diseased bones and joints; we rarely make them what they were before attacked. The Germans must do what they can to repair the injury wrought to a stricken world, but they, too, are at the wrong end. Prevention of the development and propagation of a virulent philosophy would have saved the world from the scourge of their vile contagion, and themselves from humiliation, downfall, and disgrace.

The political surgeons of the allied countries have been for some time working on the bones and joints of the body politic. They are trying to straighten this limb and bring function to that joint. They are chiselling out the sequestra from the discharging sinuses. The outlook for recovery is good; and as they work and sweat over the heaviest piece of political surgery ever undertaken, a low, determined murmur spreads throughout the immense amphitheatre of the world, "Never again! Never again!" And they have formed a gigantic league bent to the common purpose of stamping out from civilization the great red plague. Nations are not only to be trained in preventative measures, but also policed to ensure that these measures are carried out.

We are a diverse, or perhaps perverse, conglomeration of units, not standardized like the Ford car, and to get us working in harmony, it is not enough to have our duty pointed out to us, but it is also necessary to adopt measures to insure the performance of that duty. For the one man or woman who from an inherent sense of duty submits to the prosecution of certain laws and regulations for the good of public health, there are five who feel that this is just another set of formulæ turned out by professional legislators, or local officiousness, and not to be taken too seriously.

In fighting the great white plague we must do what the allies are doing to eradicate the great red plague. I make no apologies, gentlemen, for striking an analogy between our position and theirs; between disease of the physical, and that of the social and national order. We have not yet leagued our profession to its full effectiveness, and the policing of the territory has been inadequate and in some ways altogether futile. When householders learn from the experience of fines or imprisonment that they may not keep disease producing nuisances in their back yards; when landlords learn in the same way that they may not crowd men, women and children in small hovels where the smoke of some near-by factory or some worse thing takes the place of God's sunshine and fresh air; when the people themselves, who with full knowledge of their responsibility, wilfully break the health laws, shall suffer the penalty of broken laws, we shall begin to get results. And they will be great results, gentlemen. They will flow from the fountain source of wise laws framed under the guidance of a unified profession united to the State in the closest possible ties, and supported and executed by a public that, high and low, has realized in full that no one lives to himself alone—that the right of the individual must blend in harmony with the duties he owes his community and his country.

Tuberculosis, then, in its different forms is our first great problem, and its solution belongs essentially to preventative medicine. I hope to touch later more definitely upon the relationship between an organized profession and preventative medicine. But before that let me glance at the venereal problem.

VENEREAL DISEASES

There is nothing new about the problem of venereal disease; it is, to say the least, very ancient history. But its age does not clothe it with any of that respect we owe to a worthy foe. It is an enemy not of the light, but of the darkness. It belongs to the insidious, lurking, merciless class, gloating in its shame over the ruin it has wrought in every era, and in every country. It has the powerful backing of intemperance, ignorance, and immorality. It has no honour in its warfare, because the innocent are made to suffer with the guilty.

During the air raids and submarine deviltries of the Germans, our moral sense was moved to profound indignation at the wholesale massacre of women and little children. Perhaps the slaughtering of the children was the super-outrage, which, at last, aroused

the great soul of the world, and not only brought down defeat and humiliation on the once great German nation, but left it for a generation at least an object of opprobrium and disgust. Yet the German havoc was a mere trifle compared to that wrought in the born and the unborn by syphilis and gonorrhoea.

Addressing practising physicians, I need not elaborate the results of this disease. Nor need I, as a hospital surgeon, tell you that in our provincial hospital at Halifax, a large percentage of our abdominal surgery has to do with pathological states in the pelvis caused by the gonococci. The results of this infection in the female are simply appalling. We become so accustomed to it that we do not reflect seriously enough on its real significance. It is bad enough to find such conditions in females who recklessly tread the "primrose path"; but when one finds innocent women with diseased tubes and ovaries, requiring operations that often practically unsex them, one cannot escape the conviction that foul play is abroad in our land, and that virtue and good womanhood are not protected as they should be. Apart from this, there is the loss to the State, for such women are generally sterile. There is, too, domestic unhappiness tending to disrupt that vital unit of the nation, the home.

Can we do anything? We are all doing something, no doubt. Perhaps with better organization of our profession we could do more. Here the remedy is essentially prophylactic; and prophylaxis is impossible without some proper form of education.

We must drag this thing out of the darkness into the light. We must place it where all may see it. We must let the moral, social and intellectual light of the world beat upon it. An ugly, nasty object, you say. Well, this is just the reason why you must gaze upon it. You remember MacDuff's words when he had brought to the ground the arch-villain Macbeth, perhaps in all Shakespeare the most diabolical:

"Then yield the coward
And live to be the show and gaze of time;
We'll have thee as our rarer monsters are,
Painted upon a pole, and underwrit,
'Here you may see the tyrant'."

We must exhibit this tyrant of venereal disease to the people. In this case seeing is not only believing, but also avoiding. Light is what we need. Some for a time may not understand the necessity for education in this matter of venereal disease. But we should carry on. "And the Light shineth in darkness, but the darkness comprehendeth it not."

Whoever has read the "Breakfast Table" will recall Oliver Wendell Holmes' illustration in discussing the value of proper publicity of certain great social questions. He tells that walking through the fields one day he came upon a large flat stone, and in obedience to some instinct put his foot under it, and turned it over. What did he see? Bugs, worms, and slimy creeping things; and, when the sunlight was suddenly let in upon them, they hurried to hide themselves, because, being creatures of the dark and filth, they cannot live in the light. A walk some time after brought him to the same spot, but where the stone formerly lay with its slimy denizens of the dark, he finds the green grass spangled with daisies nodding in the mellow sunshine. He finds highly organized life and beauty where previously existed the sordid and the vile. He had let the light in.

ORGANIZATION

To meet our problems which are certain to become more complex as we move onward, the first essential is better organization of our powers. 'Tis true that a unity of purpose exists, namely the treatment of disease. This is the rock bottom upon which all of our efforts rest, and it might be supposed that so vitally worthy an object would draw around it every power of the profession and the State. We have no such organization within our ranks and no such co-operation from without. The gap between our governing bodies and the medical profession has not been bridged well. We have been a number of diverse units, doing well in our way, day and night, treating disease, working often far beyond the limit of our strength; but with a deficiency of that practical vision which would draw us all together in an army united for the purpose of preventing disease. Many of us have forgotten to some degree at least this most important element of our calling. We have been the seed that has fallen on good ground, and, growing up, has become choked with the weeds of care and concerns of the world. We have often, 'tis true, cried out for better things, but the voice was not that of a united profession, and the result has been that only in the present year did our Canadian parliament bring in the long overdue measure providing for a department of public health.

The net value of this new department, and that of our own province, must depend to a very great extent on the support they receive from the whole profession. The philosophy of it is this, that officers of the public health, no matter how great their ability

and zeal, must apportion their results on the degree of co-operation they receive from the profession as a whole.

The note, therefore, which I wish to strike as president of this, the sixty-sixth meeting of our Society, is *a more organized profession*. The war taught us in a most striking way the tremendous significance of organization. The war was finally won by virtue of it; and in the war against disease we can do no better than follow the example of the best brain efforts of highly endowed men, face to face with the proposition of saving mankind from a virulent and destructive malady.

The whole scheme of the universe is organization. The men of the stone age hunted the mammoth together. Our early pioneers built block houses where whole communities could gather together to protect themselves from the Indians. The building of towns, whether for people or prairie dogs or beavers, is the result of community action and organization. Disease germs go in hordes, and by unity of action make things pretty hot for us. And one could go on enumerating examples where reason and instinct demonstrate the power of organization.

What benefits from a public health standpoint would better organization of the doctors promote? We would get a better educational propaganda. Then, each doctor would find it to be part of his business to educate in the ways of preventing disease. His standing in the profession would be measured as much by his activity and ability in protecting his community, as by his skill in actual treatment of disease conditions. I believe we cannot over-estimate the value of education. Without it all our health laws and the best efforts of our most zealous health officers will fall short of their full effectiveness. And the only way I can see by which the gospel of sanitation can be brought home to all the people is by the medical profession acting through its practitioners in co-operation with the health officers and clinical teachers appointed by the government.

I could take you to farm houses in this county where whole families were practically wiped out by pulmonary tuberculosis. First one boy or girl was stricken, then another and another. This, in otherwise robust and hearty Highland Scotch families. They were sacrificed because they did not know that consumption was an actively communicable disease instead of a deadly "decline", as they regarded it, and that it could be prevented or even cured by throwing their houses open to sunlight and fresh air, and adopting the other measures now prescribed. Instead they closed their

windows tight, let the germ-laden sputum dry up to infect the air of the whole house, and thus passed the deadly virus on to the next most vulnerable. Hence on their broad farms surrounded by every agency of protection and cure, they suffered the consequences of their folly: "The pity of it, Iago."

I know that conditions in this county and the whole province are much better to-day. Instruction coming in one way or another, whether by pamphlets or lectures from our most vigilant Provincial Health Officer, or in other ways has brought the elements of preventative medicine to the cottage of the remotest country place. But, as Tennyson put it: "Knowledge comes but wisdom lingers," and I would not be so certain that practice is in keeping with the knowledge of the subject.

Organization will help us to fight the venereal menace. It will help us to carry out laws framed for that purpose. Above all, it will help to work out some practical plan of education, or become an active agent in the plan now being put in operation in Great Britain. We must have co-operation here and our legislative bodies and the doctors must be working in the utmost harmony.

And, gentlemen, if we were better organized than we are, we should escape many annoyances, and even hardships. It would then come to pass that before creating laws that depend essentially for their execution on the medical profession, our legislators would, as a matter of course, consult the latter to obtain its judgement and co-operation. The shoulders of our profession may be broad and able to bear heavy burdens, but it is not always so much the weight as the irritating qualities of the burden which distress us. Our dutiful old medicine man has squared his shoulders and carried more than one bundle placed thereon by them that make laws; and some of those bundles had stickers in them which irritated the staid old gentleman's back very considerably; and, being human, he just swore a bit and carried on. For instance, the liquor law. Every thirst, licit and illicit, is placed on the shoulders of the doctor. He alone was made the medium through whom divers and sundry appetites, real or feigned, worked their way back to the refreshing fountain of the vendor. No wonder if the bulwarks of therapeutics broke down at times before this persistent and uncompromising force. Bear ye one another's burdens, indeed! But when a quiet and generally harmless body of men are made to bear the weight of a country's thirst, which thirst has an ancestry running back through centuries and ages even to the days, in the far away, when Noah planted his vineyard, and was afterwards found in a com-

promising position in his tent—I say, when a burden brings responsibilities such as this, I submit in all seriousness, 'tis a bit unwieldy to carry and should not have been imposed without our consent.

We can remedy many such grievances with proper organization. We can raise the standard and efficiency of our service. We are on the verge of hospital standardization; and we are not far from the time when men who essay surgery shall have to serve out a special apprenticeship before undertaking routine work on their own account.

With a well organized profession we can deal better with the cancer problem. Here too, some degree of education of the public is indicated. A little light on this subject and we should not get so many late cases of cancer of the breast, the uterus, and the lip. The time, too, is opportune, because the multiplication of hospitals has been doing away with the popular prejudice against cutting operations for cancer.

As a profession we should have a voice in the curricula of the medical schools. And here, and now, I would appeal to the profession of the province for united interest in the medical faculty of Dalhousie University. In all other departments of education, our status rests on the efficiency of our educational institutions; and although this may not apply to the same extent in medicine, since many of our doctors take their course outside the province, yet in a general way our medical college is an index of our standing, and therefore it behooves us to assist in keeping its standard up to the highest. To take one instance where assistance would be easy and practicable: interesting pathological specimens could be sent in from the smaller hospitals to help in building up a first class pathological museum at Dalhousie University. And I wish to strike another note. Have we not reached the time when some degree of affiliation or co-operation could be arranged between the colleges of this province and the medical school of Dalhousie? The interests of none of the denominational colleges would be prejudiced by such an arrangement, since the requirements of medical education can only be met in the large centres of population.

Gentlemen, at this first meeting after the war, there are so many thoughts to occupy our minds. In every department of human activity men seem to be standing on the boundary line between the old order and the new. The new is not entirely clear to them yet. Some mists still hamper the vision, and there are people who dash into them not knowing whither they go or what

they really desire. We have, consequently, in some quarters, what seems like an attempt to disregard all law and order; to pull down rather than to build up. Things will right themselves in time. The mists will disperse. The uneasiness, the uncertainty, the fury even, are but the phenomena of transition. It is clear at this stage, however, that the spirit of organization is in the air. Co-operation, team work, organization, must take the place of straggling, isolated, individual effort. Greater efficiency in all departments, and adjustment of that efficiency so that the humblest citizen shall share its benefits equally with the greatest. The medical profession should not stand passively by. We must lead on of our own volition, or be caught up and carried on by extraneous currents. We must lead or be led.

In the grand old story of the Arthurian Knights, we recall the philosophic mood in which King Arthur beheld the coming of a new era. Looking back, he saw that, great as had been the services rendered by his famous Order of the Round Table, it had, nevertheless many defects, the remedying of which required new forms of organization. Turning to Bedevere, the only one of all his knights to remain with him, he said:

"The old order changeth, yielding place to new,
And God fulfils Himself in many ways."

THE Ontario Provincial Board of Health announces that it is ready to supply diluted antitoxin for intravenous use.

The antitoxin is put up in 5,000-unit syringes, and consists of antitoxin which has been diluted one-half with sterile physiological salt solution. The actual dose of antitoxin in each syringe is 5,000 units. It has been determined that antitoxin so diluted is much less likely to cause severe reaction when given intravenously. The use of this antitoxin is recommended in cases of diphtheria which are not seen by the physician until the patient has been ill for several days; also in early cases which appear to be acutely toxic. Laryngeal diphtheria, which has gone unrecognized for several days, may be treated with benefit with this antitoxin for intravenous injection.

CARDIAC DISEASE WITH EXTENSIVE VENOUS AND CARDIAC THROMBOSIS

BY F. G. FINLEY, C.B., M.D.

Montreal

IN advanced stages of cardiac and renal disease there is a diminished resistance to infection. This is often noticeable after the admission of a case of erysipelas to a medical ward, when one or more of these chronic cases are often attacked by the disease.

In the case to be reported, one of cardiac hypertrophy and dilatation, the breakdown appeared to be due to a subacute infection with staphylococcus aureus, the condition being accompanied with extensive venous and cardiac thrombi.

Whilst a terminal infection, especially broncho-pneumonia, is frequent during the last days of life in chronic cardiac cases, it is less usual to find infection under such condition running a prolonged course. The successive vascular thrombi contributed a considerable degree of interest to the clinical course of the illness.

Mrs. Fletcher, aged thirty-nine, was admitted to the Montreal General Hospital on January 13th, 1919, complaining of pain in the chest, cough, and paralysis of the right arm and leg.

The patient was married at twenty. She has had two living children and four miscarriages. Shortly after her marriage, she began to suffer from severe attacks of vomiting, accompanied by severe headache and pain in the epigastrium. These attacks lasted as long as three months at a time, but since coming to this country, seven years ago, they have become less frequent and severe. There has, however, been an increased tendency to diarrhoea. Her habits have always been temperate and she has always worked hard.

Present illness. Five weeks ago she was taken suddenly with rather severe pain in the right side with diminution of power in the arm and leg. The onset was also marked by severe dyspnoea, a symptom which had been present only to a slight degree before. The pain in the side lessened, but the dyspnoea grew worse with

cough and pain in the chest. She had some vomiting and also epigastric pain. On January 10th, three days before admission, she found that she was unable to move the left arm, and on looking in a glass found that the face was drawn to the right side. During the past two days she has noticed a gradual loss of power in the left leg.

Present condition. The patient is a fairly nourished woman, propped up in bed to breathe. The cheeks are flushed, the lips slightly blue and a temperature maximum of $104\frac{4}{5}^{\circ}$. The pulse is small, blood pressure 158, diastolic 120. The apex impulse is forcible, and in the nipple line, 9 cm. from mid-sternum. The dulness begins at the third rib and extends $4\frac{1}{2}$ cm. to the right and $10\frac{1}{2}$ cm. to the left of the mid-line. At the apex the sounds are muffled, there is an occasional systolic murmur, and there is a marked proto-diastolic gallop rhythm. There is a faint diastolic murmur at the pulmonary cartilage. There is slight tenderness over the mid-sternum and at the apex. There is a rather severe catching pain on the left side of the chest and to a less extent on the right side and in the epigastrium. There is dulness at the left base extending to the costal border in the lower axilla and obliterating Traube's space. Over this area there is feeble breathing, but vocal fremitus and vocal resonance are unobtainable owing to the feeble voice. At the right base there are two finger-breadths of dulness, feeble breathing and crepitations. In the left axilla there is a pleural friction.

The liver extends one finger's-breadth below the umbilicus and has a vertical dulness of 21 cm.

The left side of the body is paralyzed. The mouth is drawn to the right side on movement but shows no change at rest. The tongue is slightly protruded to the left side. The left arm can be moved slightly at the shoulder but not below, the fingers are half closed, and there is a slight degree of spasm at the elbow. The leg is weak but she can move the hip, knee, and toes to a slight extent. Knee jerks are both increased, there is a well marked clonus on the right or non-paralyzed side and a few jerks on the left; a Babinski reflex is present on both sides. Sensation is normal.

On January 24th, the patient complained of sudden severe pain in the left forearm. A day or two previously she had complained of slight pain in this part with tenderness. Fulness in the supraclavicular region was noticeable, with tenderness along the course of the axillary veins and of the veins at the bend of the elbow, with some enlargement of the veins of the forearm and front

of the chest. The hand was slightly swollen and there was marked œdema about the elbow. A rounded and tender cord was present in the supraclavicular region and along the line of the brachial vessels. This condition was regarded as a thrombosis of the brachial, subclavian and probably the innominate veins.

On February 2nd, it was noted that the power of the arm had been rapidly returning for a week. She could grasp an object and could flex and extend the wrist. There was no trace of weakness in the face or leg. The left-sided Babinski and ankle clonus was still present. The left subclavian vein was felt as a hard cord but without tenderness.

February 6th. Three days ago she complained of considerable pain in the right side of the neck and forearm, followed next day by fulness in the supraclavicular region with tenderness extending down to the axilla. A cord was felt along the posterior border of the sterno-mastoid muscle and along the course of the brachial vessels; the veins of the forearm and front of the chest were slightly swollen and prominent. Swelling of the right arm was present for a few days.

On March 1st, the patient had a weak turn, becoming cyanosed, and paralysis again appeared on the left side in face, arm, and leg. A double Babinski, ankle clonus and increased knee jerks were present, also incontinence of urine and fæces.

During her illness there was considerable dyspnoea, often orthopnoea, with a moderate grade of cyanosis. The heart almost constantly presented the pre-systolic gallop rhythm and there was heard only an occasional systolic murmur at the apex, whilst the diastolic murmur heard on admission passed off soon after admission, being only heard on two occasions. There was an increased blood pressure until late on in the disease.

The urine varied in specific gravity from 1021 to 1026, containing .6 to .9 per cent. of albumen, granular and hyaline casts, pus and epithelium. The quantity was reduced, varying from 150 to 500 and 600 c.c. daily.

During the stay in hospital the temperature was slightly elevated most of the time, varying from 99° to 101° or 102° in the evening and usually normal or subnormal in the morning. There were short periods of apyrexia. Blood counts showed white cells from 8,200 to 9,200. Wassermann always negative. Blood cultures taken on several occasions were negative. Electro-cardiographic tracings were normal, and also the fundi of the eye. The condition of the patient became gradually worse.

The paralysis on the left side persisted with frequent incontinence. Dyspnoea became more urgent, the pulse weak and small, prostration was marked and there were severe pains in the right thigh and in the abdomen, for which no satisfactory explanation would be found. She died on April 16th.

Abstract of autopsy notes, performed by Dr. W. J. Scott, 11 hours p.m.

There is œdema of the left upper arm and left foot. The heart weighs 500 grams, the organ is dilated and hypertrophied and there are, in addition to post-mortem clots, yellowish grey clots adherent to the walls of the right auricle and ventricle and to that of the left ventricle. In both ventricles some of the clots have softened in the centre and contain a brownish fluid resembling anchovy sauce. In the left ventricle one of these thrombi forms a large rounded collapsible mass, measuring 5 cm. \times 2.5 \times 1.5 cm. attached to the apex, and containing brownish fluid in its centre. At the point of attachment the wall of the ventricle is thinned and extensive fibrous tissue strands extend through to the epicardium. Coronary orifices are normal. A few fine warty vegetations are present on the aortic valve. The pleuræ are adherent, and there are numerous areas of firm dark red infarcts in which thrombosed vessels can be seen on section. The left pulmonary artery is completely occluded by granular, pink, ante-mortem clot. The left subclavian vein is completely occluded by organized clot, whilst the right vein is filled with granular pink thrombus. A mass of clot is found in the superior vena cava extending from its branches. The axillary glands are enlarged and deeply congested. In the inferior vena cava there is a small mass of adherent clot below the diaphragm extending into one of its branches.

Bacteriology. Staphylococcus aureus is present in the heart's blood, the lung infarcts, and in the softened cardiac thrombus in the left ventricle.

Anatomical diagnosis. Myocarditis, acute and chronic. Endocarditis, acute. Mural thrombi, multiple, in ventricles and right auricle. Pulmonary infarcts. Fibrous pleuritis. Passive congestion of liver and kidneys. Thrombosis of subclavian veins. Thrombosis of pulmonary artery.

The case was regarded during life as one of infective endocarditis. In favour of this view was a heart with failing compensation, fever without other apparent cause, and the presence of hemiplegia.

There were, however, certain features throwing some doubt

on this view, although it seemed the most probable diagnosis during life. Amongst the doubtful points were the enlarged heart with gallop rhythm and increased blood pressure, more suggestive of cardiac hypertrophy with failing compensation than of endocarditis. The murmurs were of a temporary character. The diastolic murmur heard early in the disease was, in the light of the post-mortem examination, probably due to clot in the pulmonary artery temporarily interfering with the closure of the valve, whilst the apical systolic murmur was one of relative mitral incompetence. Although murmurs may be absent from first to last in endocarditis, yet it is usual for one or more to develop and persist during the malady. The absence of a palpable spleen, the low leucocyte count and the negative blood cultures, were also not in harmony with the usual picture of subacute infective endocarditis. Tenderness over the sternum, as described by Libman, was present at one stage of the malady but was not a prominent or persistent symptom.

The autopsy findings revealed an hypertrophied and dilated heart, corresponding to the signs found during life. The only trace of endocarditis consisted in a few minute verrucose granulations on the aortic valve. The important lesions, in addition to extensive vascular thrombi, consisted in ante-mortem greyish-yellow clot in three chambers of the heart, the ventricles, and the right auricle. The largest of these was situated near the apex of the left ventricle where the wall of the heart was thinned and fibrous and its centre was broken down and fluid and contained a growth of *staphylococcus aureus*. Several clots in the right ventricle also contained softened centres.

The thrombi in the veins of the neck and arm, first on the left and later on the right side, correspond to the cases described by Welch of venous thrombosis in cardiac disease. This writer shows that the thrombosis in heart disease usually attacks the veins leading from the upper extremity, and more frequently on the left than right side. The condition arises chiefly in mitral stenosis; its localization in the upper part of the body and especially on the left side is attributed by Welch partly to the greater length and obliquity of the left innominate vein, partly to pressure on the left subclavian vein by the dilated left auricle and dilated pulmonary vessels. An infective process appears probable as the immediate cause of the thrombus.

The presence of bacteria in a cardiac thrombus raises the question whether they are the cause or merely the secondary invaders of the clot. Cardiac thrombi are usually sterile, and form

in marantic conditions, particularly when any localized area of degeneration is present in the heart wall. That these conditions were present in this case does not, however, enable us to exclude the possibility of a primary infection. Thrombi in veins are much more frequently associated with bacteria than are cardiac thrombi. In the case under discussion, the thrombosis was so wide spread in the veins of the body that this condition must have been due to some cause acting in the blood itself, and although it cannot be positively stated that it was due to bacterial invasion, this seems to be the most probable hypothesis, and, if we admit such a view, it is logical to regard the cardiac clots as due to the same cause. The earliest clinical manifestation was the development of pulmonary infarction, and this may well have proved the starting point of the bacterial infection.

Ante-mortem cardiac clots are of common occurrence in the cardiac cavities. An excellent description of them was given by Bristowe in the *Trans. Path. Soc.*, vols. vii and xiv. He discusses the possibility of the softened puriform centres breaking down and causing pyæmia, deciding that such a result is highly improbable. References to infected cardiac thrombi are rare in literature, apart from the vegetations of endocarditis. Welch refers to a personal case of a child dead of scarlatina, in whom a streptococcal endocarditis of the mitral valve was associated with a softened thrombus in the right ventricle containing the same organism. The same writer quotes cases of white thrombi in the heart in tuberculosis and containing tubercle bacilli. In a case of typhoid fever, a disease in which cardiac clots are rare, under Dr. Gordon at the Montreal General Hospital, thrombi were found with a pure growth of typhoid bacilli. In all these cases it is, however, very difficult, indeed impossible, to say whether the organisms are primary or merely secondary invaders, and we have at present no conclusive evidence that cardiac thrombi, even when infected, owe their origin to the action of bacteria.

OBSERVATIONS ON FLYING SICKNESS, WITH SPECIAL REFERENCE TO ITS DIAGNOSIS

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EVER since man has given up the gills of his marine ancestors, his motile activities have been, all those many centuries, in close contact with the earth. When gradually he assumed the upright posture he maintained that erect position, first through the sense of touch conveyed through his lower limbs coming in contact with the earth's surface; second, by the sense of sight conveying to his brain the outline and general proportion of surrounding objects; third, by means of that portion of his internal ear known as semi-circular canals. The impressions conveyed through these channels are carried to his cerebellum, and as a result of the co-ordination of those impressions he is able to orient his body in space. If, after a few weeks training, he is called upon to give up this motile habit, which has been the product of centuries in its formation, and asked to rise from the ground level to great altitudes; from comparative warmth often to intense cold; from relative quiet to a continual rush and roar; from a state of equilibrium to one of instability; from muscular and mental rest to highly skilled and nerve-trying evolutions; from safety to possible death; which is the experience of every aviator who manœuvres his machine to fight the enemy, or to dodge the shrapnel of an anti-aircraft battery. In this adventure he is subjected to intensive, intermittent and cumulative stimuli of a degree to which man has never been exposed before. These unfavourable, afferent impulses produce perceptions of the most trying character, so that the individual's *reserve force rapidly becomes used up*, and after many shows he becomes, to use his own expression, "dud". He lacks resolution, loses confidence in himself, becomes stale, and if he is not withdrawn for a rest, usually comes to grief. This grief includes the destruction of his machine, and if he is flying a two-seater, the life of his observer as well.

The average number of shows of any duration, in quick succession, which a man can stand, is about thirty. A hundred and fifty hours continuous flying, day after day, is sufficient to entitle the aviator to a rest, in order that he may regain tone generally, which is only possible if his organs are allowed to function in a normal environment, such as a change of scene associated with mental and physical rest.

When these facts are borne in mind, is it any wonder that there is a train of symptoms observed peculiar to aviators, known as "flying sickness", which may be more properly designated as "flying stress"?

If we observe the morbid effects upon the different systems due to flying, and the tests* used in recognizing those conditions, we shall more definitely understand the importance of clearly recognizing them, both from the standpoint of the individual, and in the best interests of the State as well.

While no gross pathological change takes place in this disease, it is yet readily recognized as we observe the marked alteration in function occurring in various organs. We are forced, therefore, to define flying sickness as a morbid condition brought about by flying, and indicated by the altered function of various organs.

The greatest stress falls, first, upon the cardio-respiratory system; second, the nervous system; and third, the muscular system.

The normal percentage of oxygen in the air is about 21 per cent., which remains more or less constant irrespective of the altitude reached. As one ascends the pressure decreases. It is well known that the pressure at the earth's surface is about 14.7 pounds to the square inch, while at 20,000 feet, for instance, it is less than one half that at the earth's surface. The oxygen tension, however, becomes correspondingly less with the fall in barometric pressure. Therefore there are few individuals who can ascend to altitudes greater than 20,000 feet while not using supplemental oxygen, without experiencing particularly unfavourable symptoms. So far as I am aware, the balloon ascension mentioned in Stewart's "Physiology", where the balloonist lost consciousness at 29,000 feet, is an indication of the stoutest aviator's scaling.†

* These tests may also be used in assessing the condition of candidates for flying in order to ascertain if they possess sufficient reserve force to enable them to become successful aviators.

† It has frequently been found that pilots who have suffered from concussion, or after stress of service, experience oxygen want at altitudes where they formerly flew without any indication of discomfort.

It is obvious then that with increased altitude, and lowered oxygen tension, the respirations become deeper, in order to maintain the necessary amount of oxygen to carry on the metabolic changes in the body. Those deepened respirations represent muscular effort, resulting in an increased production of CO_2 . The heart beats more rapidly, and although called upon to do more work, which would obviously necessitate a greater supply of oxygen, the supply of oxygen is continually decreasing. The blood is therefore deprived of the necessary oxygen to carry on the body process, with the resulting accumulation of those substances which bring on intoxication. Dyspnœa and Cheyne-Stokes breathing are therefore quite common. Syncope symptoms occur among observers after muscular effort. The effects of this intoxication are pronounced on the nervous system; marked impairment of judgement is frequently noticed, though the person is quite confident that his mind is absolutely clear; perception is affected, while sensation remains normal; headache after landing, and insomnia frequently follows a period where the aviator is compelled to go repeatedly day after day upon long shows. These symptoms are associated with other signs of exhaustion, such as altered blood pressure, disturbed vasomotor system, associated hæmic murmurs, relative insufficiency, tremors, and increased reflexes. The appearance of these symptoms, to which may be added muscular weakness, largely depend upon the kind and amount of work done in a given time. Repeated and prolonged exposure to altitudes of 18,000 feet, with short intervals between flights, produce continuous cumulative stress, to which the human organism is compelled to give way.

It is obvious that forty hours in two weeks would have a more deleterious effect upon the individual than one hundred hours in three months. The effect on the nervous system has been summarized by Lieutenant-Colonel Martin-Flack, when he states that in addition to the physical strain incurred by the judgement displayed in a simple, straightforward flight, there is added quick response to changing atmospheric conditions, such as "Bumps", and in war-time flying there is superadded the strain of judgement involved in work to be done. He points out that this strain is not all cerebral in nature; there is a constant instreaming of impulse to the cerebellum concerned in the process of equilibration; to the medulla oblongata in making adjustment of the respiratory and circulatory mechanisms; to the spinal cord for the co-ordination of the reflex movement in the static muscular work involved. All this in a rarified atmosphere.

Sickness at high altitudes may simply take the form of slight discomfort, frequently described as gasping for breath; or the aviator may complain of becoming giddy, or dizzy, while actual fainting in the air does sometimes occur. The gasping for breath, giddy and dizzy sensations are largely due to lack of proper oxygenation of the blood. It is well known that most pilots become mouth-breathers when they ascend to 10,000 feet or more. Fainting in the air is largely due to splanchnic flooding, with its accompanying cerebral anæmia, and is usually associated with cardiovascular debility, due in a measure to exhaustion. Cases have been known where aviators have fainted at 17,000 feet, and have regained consciousness after dropping a few thousand feet, the rapid return to consciousness no doubt being due to the stimulating effects of the rushing air, and the rapid increase in barometric pressure. Nausea and vomiting do not occur very frequently among experienced pilots. Vomiting is usually due to a dilemma from wrong impressions. It is also frequently associated with vertigo produced by a hyper-sensitive labyrinth, and consequent reflex action. Neuroses have been observed among pilots flying only at an altitude of 5,000 feet, indicating an irritable stomach and invariably associated with a past history of gastric irritability.

With regard to the ear: sometimes temporary deafness after high flying and dives of a few thousand feet, which may be associated with pain, dizziness and fainting, and disturbed equilibration, is noticed. This is brought about by the sudden change in barometric pressure and a delayed function of the eustachian tubes. For example, at 17,000 feet the pressure is reduced to about 410 m.m. Hg., as opposed to 760 m.m. at sea level. Therefore, if the eustachian tubes remain closed during an ascent the pressure on the outer side of the drum would be 410 m.m., and that on the inner side 760 m.m. The drum would bulge tensely outwards, and deafness would result. This, however, does not occur, as the increased pressure in the inner ear forces the eustachian tube open, and the pressure is equalized. In a descent the reverse is the case, that is, the drum bulges tensely inwards owing to the rapidly increased external pressure, and the eustachian tube remains closed, with the production of the symptoms mentioned, unless active steps are taken to adjust the difference in pressure. Airmen rapidly find that swallowing prevents this, and many of them chew gum while flying in order to facilitate this. Moving the jaws also assists. If these measures fail, holding the nose and ballooning the cheeks will produce the desired effect.

A uniform classification has been adopted for flying sickness by the British Army, consisting of the following nomenclature:

- (a) Sickness at high altitudes.
- (b) Fainting in the air.
- (c) Cardio-vascular debility.
- (d) Exhaustion.
- (e) Vomiting.
- (f) Vertigo.

EXAMINATION FORM

Report on:

Squadron,

HISTORY.

1. Previous
2. Flying History.

	Service	Hours	Work	Shows	Average Height	Max'm. Height	Crashes
England.....
France.....

COMPLAINT.

PRESENT CONDITION.

1. Cardio-Vascular System.

(a) Heart.

(b) Pulse

Rate per 15 seconds.

Per minute.

Increase.

Sitting.....

Standing.....

After exercise.....

(c) B. P.

Systolic.

Diastolic.

Pulse Pressure.

(d) Jugular engorgement.

RESPIRATORY SYSTEM.

(a) Lung.

(b) Holding breath. Suffusion of face.

Answer.

(c)

Vital
CapacitySupplemental
AirExpiratory
force in m.m.
m.m. of
mercurySustaining
40 m.m.
mercury by
blowingPulse rate in
5 second
intervals

(d) Oxygen Want.

Dryer Method.....feet.

Bag Method.....feet.

NERVOUS SYSTEM.

(a) Equilibration.....

(b) Reflexes.....

(c) Tremors.....

MUSCULAR TONE.

(a) Abdominal Wall.....

(b) Stomach Splash.....

SPECIAL SENSES.

Right

Left

Eyes.....

Ears.....

OTHER COMPLICATIONS.

DIAGNOSIS

Date.....

Method of examination. We have adopted a routine method of examination which we believe to be useful in the proper classification of patients. The flying history is of value, in that it indicates the amount and character of work accomplished. The history of crashes, with or without injury, is of importance, as the stability of the individual is likely to be detrimentally affected by a recent accident associated with concussion.

Heart. A mitral valvular lesion should not debar a man from flying if the heart muscle is in good condition, and no signs of enlargement exist, providing the airman passes the breathing and U-tube tests. Accidental, or so-called hæmic murmurs, are frequently heard over the valves of the heart, and in the veins of the neck, in aviators suffering from exhaustion due to flying stress. These are no doubt due to a vaso-constrictor inhibition. This condition of relative incompetency rapidly passes off, and one will find that the murmurs entirely disappear with a couple of weeks' rest. In some cases the so-called irritable heart is produced.

Pulse. A rapid pulse is frequent, and in those who are beginning to suffer from flying stress a low systolic blood pressure is the rule. After resting the systolic pressure increases, while the diastolic remains the same, with a resulting high pulse pressure. A diastolic pressure below 70, with a pulse pressure greater than 50, indicates that the aviator is unsuitable for flying. The standing pulse is markedly increased over the sitting pulse. There is a marked increase in the pulse rate after exercise, with a slow return to normal. An excellent pulse in an aviator is a small range between systolic and diastolic pressure; take for example 25, with a return to normal after exercise in fifteen seconds. The blood pressure should be taken with a mercury sphygmomanometer, in preference to any existing spring apparatus. A routine method of exercise has been adopted, which consists of having the individual raise himself on a chair ten times in fifteen seconds.

Jugular engorgement, augmented by abdominal pressure, is an indication of splanchnic flooding, and of cardio-vascular debility.

With regard to blood changes: It has been observed that the cellular elements are increased at the expense of the plasma.

So far as I am aware no case of nitrogen emboli, such as occur in caisson disease, has been observed after the most rapid ascent. This is not to be wondered at, when we consider that the reduction in pressure in an ascent is gradual, and that the aviator has not had his body fluids saturated with nitrogen by working under two

or three atmospheres of pressure, such as those employed in the caissons of bridge construction.

In examining the respiratory system, the usual clinical examination is made of the lungs. The vital capacity, and the supplemental air, are taken by meter. In taking the vital capacity, the aviator is asked to take a deep breath, and blow through the meter. In taking the supplemental air, the subject is asked to inhale and exhale normally before blowing through the meter. The vital capacity should be about 3,500 c.c. Aviators with a vital capacity below 3,000 c.c. cannot be regarded as fit subjects for flying. The supplemental air should be about 1,500 c.c.

Holding the breath. The aviator is asked to exhale as deeply as possible, and take a deep breath and hold it as long as possible. In this test, holding the breath sixty seconds is considered good; many hold it for seventy seconds, or more. Those who are unable to hold their breath for more than forty-five seconds are considered doubtful subjects for good flying. Any suffusion of the face is noted, and the candidate is asked why he gave it up when he ceases holding his breath, and the character of the answer is noted. The person who is likely to suffer from oxygen want is liable to give an abnormal answer, although an abnormal answer given by a person who holds his breath, say seventy seconds, cannot be considered an untoward sign; while an abnormal answer, after doing his utmost for forty-five seconds, would indicate that the subject is not fit. The remark, such as "It is beastly", say after holding the breath for thirty seconds, indicates that the subject is not trying, or is a neurasthenic. The principle underlying the breath-holding test is that it is an indication of the aviator's vital capacity. As the oxygen content of the valveolar air becomes less and less, the length of time he holds his breath, without discomfort, indicates the height he may fly without discomfort. It is, in a manner, like his ascending higher and higher in progressively rarified air.

Expiratory force. In making this test the aviator is asked to blow a column of mercury in a U-tube to as high a point as possible. 80 m.m. is considered the minimum in this test. The subject is then asked to exhale, and take a deep breath, and sustain the column of mercury at 40 m.m. for as long a period as possible, holding the nose if necessary. The minimum for this test is considered to be forty seconds, being the time that a good pilot should sustain a column of mercury at the 40 m.m. mark. (In applying this test, care must be taken that the individual does not force the column of mercury to 40 m.m. and then insert his tongue in the tube.

This is readily detected by the lack of apparent effort on the part of the individual, and by the character of his pulse not changing during the indefinite period he would be able to sustain the column if his tongue were inserted in the tube). The pulse rate is taken in five-second intervals during the test. The pulse of a stout pilot will hold out steadily, for example, 7, 7, 6, 6, 6, 6; while that of a pilot suffering from exhaustion due to flying stress, will, after the first ten seconds, become a rapid running uncountable pulse. This test is also of value in testing the working power of the heart with valvular lesions so pronounced that after a mere stethoscopic examination one would consider them unfit for flying. Yet they frequently pass this test with amazing superiority, indicating a high standard of functional value. This test is also of value in assessing head injuries due to crashes, as they usually fail in the test if not fit. A good average aviator should hold his breath sixty-six seconds, and have a vital capacity of 3,800 c.c.; expiratory force of 610 m.m. of mercury, and he should sustain by blowing 40 m.m. of mercury for at least fifty seconds.

Oxygen want may be tested by a decompression chamber, such as that devised by Dr. Robertson, of Chicago, which consists of a steel cabinet, to which is attached a vacuum pump for removing the air, and an altometer. The Dreyer apparatus has the advantage over the chamber in that we may study the effects of decreased oxygen partial pressure without the influence of reduced pressure on the body generally. This apparatus consists of a motor for forcing the air through a meter into the breathing chamber through a tee pipe, to one limb of which is attached a nitrogen cylinder with a meter. A tube connects a Tizot mask with the breathing chamber. A mixture of atmospheric air and nitrogen is allowed to pass into the breathing chamber in order to change the partial pressure of oxygen at any desired rate, thus producing the same effect as if ascending in the air. Observation is made by means of a stopwatch. By this means a given volume of air and nitrogen is allowed to pass through their respective meters, and by a simple mathematical problem, the barometric pressure corresponding to a given oxygen partial pressure in the mixture is calculated.

The Flack bag is a more simple method, and very useful. It consists of a mouthpiece connected by means of a flexible tube to an absorbent cartridge for CO_2 , which is attached to a 5-litre bag. A pass tube is attached to the bag to permit the testing of the contents. The aviator is given the bag, and after adjusting the mouthpiece he is asked to breathe through the nose and exhale into the

bag. When the bag is filled, a clip is put on his nose, and he is asked to breathe quickly in and out of the bag until he feels he can go on no longer. At this point he expires deeply into the bag, and the flexible tube is clamped. A sample of the air is taken from the bag by means of a vacuum tube. The percentage of oxygen in the sample is obtained, which represents the alveolar air, normally consisting of 16 per cent. oxygen at 760 m.m. pressure. If, for example, the bag content is 11.5 per cent., the altitude to which the aviator could fly without oxygen want would be indicated by the following mathematical problem:

Normal atmos- pheric pressure		Oxygen content of bag
760	x	11.5

= 546 m.m. Hg. = 9000 ft. alt.

16

Normal oxygen content of
alveolar air

Pilots suffering from oxygen want, who have fainted in the air, frequently experience the same sensation when using the bag. A first-class pilot will breathe the bag from three and a half to four minutes, until the percentage of oxygen becomes as low as 8 per cent.

The nervous system, from the point of view of stress, is undoubtedly greatly affected in individuals suffering from flying sickness "D" that is due to exhaustion. Equilibration may be poor, reflex increased, and a marked tremor may be observed. Equilibration is tested by having the patient stand erect, with eyes closed. He is asked to touch his nose with his right and left hands. Any swaying is noticed. Reflexes are recorded as "sluggish", "normal", "brisk" or "exaggerated". Tremors are tested by having the subject shut his eyes, and extend his arms with fingers separated and slightly flexed. Any tremor of eyelids, or fingers are observed and recorded as "absent", "slight" or "marked". One untoward experience may be sufficient to unbalance the nervous system of the stoutest pilot. I know a most efficient pilot, who, while flying in formation, met with an accident on a turn. At that moment the machine to the right and slightly above him slowed its engine, lost flying speed, and side-slipped into him, carrying away part of his tail, and destroying his control, causing him to tumble helplessly for a few thousand feet. He then managed to

get his machine into a spin and when within a few hundred feet off the ground was able to right the machine and make a safe landing. Although an excellent flier, his subsequent efforts to fly in formation were a failure. On one occasion he broke away from his formation, knowing that he would be pounced upon by enemy scouts, preferring this to the strain imposed upon him by continuing in formation. This pilot, after a rest, did excellent artillery observation work.

As regards muscular tone: the condition of the abdominal wall is graded as "firm", "fair," or "soft". A soft doughy abdominal wall, with a splashing stomach, in addition to denoting lack of tone by allowing the abdominal pressure to fall, aggravates any tendency to splanchnic flooding, and should be viewed with suspicion. It must of course be taken in conjunction with the condition of other systems.

Eyes. Upon admission into the Air Service, the aviator must have perfect stereoscopic vision, and ocular movements regular and identical. He must have 20/20 vision, without glasses, and normal ocular vision. It will be seen, therefore, that eye examinations are only necessary upon those aviators who may have received injuries from crashes, or other causes, perhaps the one exception being that an attack of jaundice may impair the night vision of pilots who are engaged in night work to such an extent as to render them useless for a time at least. Captain H. Gardiner-Hill, R.A.F., M.S., has devised a fixed focus dark chamber, with interchangeable white letters as the test object. Indirect light is gradually let into the dark chamber by means of moving a graduated slide with an angular opening, so that the light which is contained in the adjacent chamber is allowed to very gradually illuminate the test letters. A scale was made by using as a control a large number of normal visioned night pilots. Captain Gardiner-Hill has had a number of cases who, after having an attack of jaundice, were noticed first by their observers to have been unable to observe objects that were pointed out to them. This necessitated their going unnecessarily, and often dangerously low in order to bomb their objective. Upon returning to their dromes they frequently had difficulty in making good landings. This condition is supposed to be brought about by the action of the bile salts upon the redopson; in some cases there exists a definite retinitis.

Ear. All aviators are supposed to possess 40/40 hearing, and have a normal static balance apparatus. It is therefore necessary, if the aviator has undergone a recent illness which would have any

tendency to affect the potency of his eustachian tubes, to ascertain if these are still functioning. Also an attack of mumps is sometimes associated with internal ear disease. If he is recovering from the effects of a recent crash, associated with head injuries, one should see that the labyrinths are still functioning.

As pointed out by the physiologists, there is very strong evidence that the semi-circular canals are concerned, not in hearing, but in equilibration. A pigeon from which the membranous canals have been removed, still hears perfectly well, so long as the cochlea is intact, but exhibits most profound disturbance of equilibrium. Some authorities claim that a dead labyrinth would be an advantage to an aviator, because normal labyrinths afford the possibility of vertigo and dizziness. This view is partially borne out by certain aviators' statements. It is well known that aviators occasionally get into a spin while flying for any length of time in dense clouds, as some of them claim that the only way they know they are upside down is when they find themselves hanging on their belts. If they find the wind striking them with terrific lateral force they realize they are in a side slip. Night pilots also claim that they depend largely upon the sense of sight. Even at considerable altitude there exists a visible cloud horizon. Taking these statements for what they are worth, I am nevertheless convinced that an individual whose labyrinths are not functioning, cannot fly a plane without disaster. A person who has never been sea-sick while travelling on the ocean, should have his internal ear thoroughly examined, as there is every possibility that he does not possess a normal static balance apparatus.

The Barany chair method is used to determine the presence, or absence, of an intact and normal active static apparatus. The principle underlying this test is that the movements of the endolymph in the semi-circular canals in a given direction, stimulates the sensitive hair cells in these canals, and produces definite phenomena: (1) Nystagmus; (2) Vertigo; (3) Past-pointing, and (4) Falling.

Nystagmus. The individual is placed in a Barany chair, with his head tilted thirty degrees forward, and eyes closed. He is turned to the right ten times in twenty seconds. The chair is suddenly stopped, and he is asked to look straight ahead at some distant point. There should occur a horizontal nystagmus to the left for twenty-six seconds duration. (This may be repeated to the left.)

Pointing Test. The individual sitting in the chair closes his

eyes, and touches the examiner's fingers, which are held in front of him. He then raises his arm to a perpendicular position; then lowers it, and touches the examiner's fingers. He is then turned to the right ten times in ten seconds. When the chair is stopped, the normal individual will past-point, or deflect to the right at least three times.

Vertigo. The person is turned to the right, and is asked to tell the examiner in what direction he is being turned. During the turning to the right ten times in ten seconds, he will say "I am going to the right." The chair is then stopped, and he will say at once, "I am going to the left." A stop-watch times him until he says, "I am standing still." The vertigo thus produced should last normally twenty-four seconds.

Falling. The individual's head is inclined ninety degrees forward, with eyes closed. He is turned to the right five times in ten seconds. On stopping, the person raises his head, and should fall to the right. As long as the head is kept in the first position, the vertigo remains horizontal, but on raising the head to an upright position the vertigo immediately becomes vertical, and the person imagines he is falling, throws himself to the right in order to correct what he supposes to be an abnormal position.*

PERCENTAGE OF VARIOUS TYPES OF FLYING SICKNESS, CASES HOSPITALIZED

A classification of all patients admitted to hospital suffering from flying sickness shows the following percentages:—

Sickness at high altitudes.	15.1 per cent.
Fainting in the air	9.4 "
Cardio-vascular debility... ..	20.7 "
Exhaustion... ..	39.6 "
Vomiting... ..	7.5 "
Vertigo... ..	7.5 "

It is of interest to observe that the highest percentage of cases are those due to exhaustion. They have invariably been stout pilots with a history of many hours flying, and have usually been regarded by their squadron commanders as "Full-out" aviators.

*Those interested in an exhaustive study upon the internal ear will be repaid in consulting "Equilibrium and Vertigo" by J. H. Jones, M.A., M.D., published by Lippincott & Company.

Many of these have presented a condition, upon examination, which might readily have led to placing them in the cardio-vascular class, owing to the evident disordered action of the heart. The flying history, however, being taken into consideration, and the results of the U-tube test being properly interpreted, clearly demonstrated them as pilots suffering from exhaustion due to flying stress.

Treatment. Place a patient in an absorbing environment, free from flying associations; gradual exercise, walking, golfing, etc.; later, riding and tennis may be indulged in. The disordered vascular system rapidly rights itself with rest. Symptoms, such as flushed face, multiple murmurs and rapid heart, insomnia, headache and tremors disappear quickly when a patient is given a thorough rest under proper surroundings.

The value of the regular use of oxygen by all aviators while flying over 12,000 feet cannot be over-estimated.

Conclusion. The object in preparing this paper has been to correlate part of the existing knowledge, and record personal observations upon the conditions known as the various types of flying sickness. After a careful examination of a large number of aviators actually engaged against the enemy at various altitudes, we are forced to recognize that youths do not stand the strain imposed upon them as well as the more matured. Twenty-three to twenty-eight would appear to be the best range of age. The neurasthenic, and the temperamentally unfit are readily recognized and given any number of cases the diagnosis should be correct in almost every instance. The opinion arrived at as regards the flying capabilities of the individual concerned should usually agree with that of his squadron commander, that is, if the clinical methods described in this paper are accurately followed, these methods, after all, being largely applied physiology.

In conclusion, I wish to state that my best thanks are due Captain J. E. Bloomer, C.A.M.C., for much painstaking work upon flying sickness in the wards of No. 8 Canadian Stationary Hospital, where all aviator patients from the Independent Force, R.A.F., were admitted.

THE CARE OF MILITARY MENTAL CASES

BY E. H. YOUNG, *Major A.M.C.**O.C., Cobourg Military Hospital*

IN this paper no attempt is made to describe a complete psychiatric military service, but merely to give some account of the methods adopted by the C.A.M.C. in the treatment of its mental cases, emphasizing the respects in which these methods differ from those by which civilian cases are treated, and pointing to certain lessons from military experience which may be usefully applied to civilian psychiatric practice.

The special interest and importance of the war from a psychiatrist's standpoint lies not in the production of novel symptoms or syndromes; the psychoses met with in the army are the every-day mental diseases of civilian practice. The war, however, by the enormous mass of clinical material presented under peculiarly favourable conditions for observation and study, has had the effect of stimulating and widening interest in psychic disorders and of advancing our methods of dealing with them.

In this field military medical men have many advantages over civilian psychiatrists. For example, the military patient comes under treatment earlier. In civilian practice it is possible for a psychopath to live more or less in harmony with his environment until his disease is well advanced, provided he remains in the same environment; moreover, the patient and his relatives are inclined to conceal ominous indications of impending mental disorder until the last possible moment. Active service on the other hand, makes unusual demands on adaptability, and unsuspected weaknesses soon obtrude, which officers and N.C.O.'s are quick to note and which they wisely seek to correct by turning on them all the limelight possible. This method is very effective with the normal and no doubt makes for military efficiency, but it drives the psychopathic and weakminded individual into constant conflict with military law, causing him to become a nuisance and a menace. A unit medical officer with the above facts in mind, realizing the danger of the psychic infection spreading, and being hampered

by none of the sentimental restrictions of his civilian confrère, takes the necessary action to place the patient under skilled observation at once.

Again, when the presence of a psychosis is recognized or suspected, a military patient can be admitted to hospital without any of the delays incident to troublesome and stigmatizing legal formalities, which act so powerfully as a deterrent to prompt treatment of the civilian patient. In the army, the procedure for admission to hospital is as easy and simple for the mental sufferer as for one with a pulmonary or cardiac condition. Thus the military system operates to get the patient under treatment at a stage of the disease when treatment is likely to be most effective.

The Cobourg Military Hospital is the psychopathic hospital for the C.A.M.C. in Canada. This hospital, of four hundred and twenty-five beds, receives the greater number of its patients in convoys from the hospital ship *Araguaya*, but many cases are admitted from other military hospitals in Canada and also from Department of Soldiers' Civil Re-establishment units. Overseas cases are taken over at the port of debarkation by an escort of one medical officer and a number of skilled N.C.O.'s detailed from the hospital; this escort supervises the care of the patients en route to the hospital, an attempt being made to acquaint them with the special regulations of the institution. The medical officer, after making a rapid survey of his patients and their medical documents, classifies and assigns them to suitable wards. All documents necessary for admission to hospital are completed on the train before the patients arrive at Cobourg; thus admission is completed expeditiously and without confusion. All patients are put to bed and remain there until the medical officer completes examination and prescribes treatment. Acute cases, and also chronic cases with acute exacerbations, are invariably confined to bed; no patient exhibiting manifestations of insanity of a conspicuous or objectionable character is permitted to go about the ward disturbing or offending other patients. With adequate treatment these symptoms soon moderate, and the policy of bed treatment has proven to be in the interests of both the disturbed patient himself and also of the other patients, whose condition under different circumstances might be aggravated by him.

For the purposes of this paper it is not necessary that the therapeutic facilities of the hospital should be described in detail. The building itself was originally intended for the treatment of neuroses, but it has proved almost ideal for the care of mental

cases. Those special architectural features designed to keep the patient under close custody and which happily are fast disappearing from all institutions for the insane are here little in evidence. Except on two wards the windows are without any special protection whatever. There are no padded rooms, in fact, the custodial appliances are little more than one would find in a general hospital. The huts, which contain 75 per cent. of the bed space are identical in structure and arrangement with the standard hospital hut erected in Canadian military hospitals; they have the usual equipment for ordinary medical, surgical and laboratory work, together with the necessary adjuncts for hydrotherapy, electrotherapy, *x-ray* work and medical gymnastics. Thus an effort has been made by those responsible for the construction and equipment of the hospital to make it resemble a general hospital as much as possible, and in its organization the same object is kept in view. There are seven medical officers on the staff—a number sufficient to give daily individual medical attention to each patient. All wards are in charge of nursing sisters by day and by night, which accounts in large measure for the absence of violence and unseemly conduct amongst the patients.

Therapeutic occupation and recreation is carried on chiefly under employees of the Department of Soldiers' Civil Re-establishment, with a staff consisting of a director, two instructors and seven ward aides. The work is divided into three grades, namely, bedside occupation, class work on the wards and employment in the work shops, an effort being made to have the patient progress from the lower to the higher grades. The same personnel direct the amusements, furnishing the music for the recreation hall events and for the hospital dining room. The importance of the work of the ward aides in arousing and stimulating the attention and interest of patients in danger of sinking into dementia cannot be over-estimated. It is scarcely necessary to add that this work is not for the monetary benefit of the hospital; its purpose is solely therapeutic. The nature and amount is prescribed by the medical officer and the effect recorded on the medical charts, and if the product of the patient's efforts has a commercial value, he and not the hospital reaps the two-fold benefit. There can be no doubt that for the class of patients in a reception hospital this form of occupation, being under medical control, is much to be preferred to the routine industries of the ordinary hospital for the insane where the effect of the industries on the cost of maintenance of the institution must be considered.

These patients also enjoy the same privileges as other classes with regard to examination and treatment by the district consultants for ordinary medical and surgical special sense and orthopædic disorders; for the treatment of dental conditions two officers are detailed from the Canadian Army Dental Corps; an advanced case of dementia præcox who lost a leg in France is supplied with an artificial limb just as his mentally normal comrades are; similar arrangements are provided in the case of other physical disabilities. Seldom have clinical psychiatrists had so much assistance from experts in neighbouring medical fields as have the staff of this hospital, and the effects of this advantage are reflected in the results obtained.

The fact that its charges are mentally ill does not prevent the general public from taking a great interest in the Cobourg Military Hospital. Members of the Red Cross, Soldiers' Comforts and St. John's Ambulance Societies and also other local organizations, and individual citizens, have contributed unstintedly of their time and means for the welfare and contentment of the patients. This free mingling of the public with the patients has been encouraged because it tends to prevent them from becoming institutionalized, counteracts asocial tendencies and dispels the feeling of sequestration from the outside world so common amongst those under custodial care. Those in charge of many civil institutions often complain that they are unable to afford these advantages to their patients, owing to the comparative inaccessibility of their hospitals and the apathy of the general public.

A word as to the disposal of the patients.

It has been the rule that no patient is to be discharged until in the opinion of the medical staff there is no reasonable probability of effecting a decided improvement or recovery. When this conclusion is arrived at, the patient is brought before the standing Medical Board, who, in practically all cases, recommend his discharge from the service, adding a statement as to whether he is fit to pass to civil life under his own control or with supervision of the social service branch of the Department of Soldiers' Civil Re-establishment or whether he should be admitted to a hospital for the insane as a custodial or parole case. Thus through the coöperation of the Department of Soldiers' Civil Re-establishment with the C.A.M.C., mental cases are assured of skilled supervision from the time they step from the *Araguaya* at Portland throughout the entire course of the disease. The responsibility for making recommendations for the disposal of this class of patient makes

unusual demands on the knowledge, insight and judgement of the members of the Medical Board. During the operation of the hospital, approximately eight hundred cases have come before them, four hundred of whom they have sent to civil life and no serious incident has come to light in the after history of any of these patients which would tend to reflect discredit on the Board's recommendation.

It would appear, therefore, that in the non-restraint system of caring for mental diseases, the C.A.M.C. has carried the torch farther than it has ever before been taken in this country. The patients have been cared for in a building very slightly modified from general hospital type with a general hospital organization. Iron bars, padded rooms, straight jackets, have been entirely replaced by skilled nursing and medical treatment. No insane patient has been locked in seclusion, and no occasion for mechanical restraint has arisen. Over twelve hundred cases have been admitted and cared for without a suicide, homicide, or serious accident of any kind. Over 50 per cent. of discharges passed to civil life under their own control, and a slightly larger percentage were discharged without pensionable disability. Although the hospital is located in a residential section of the town it has been carried on with no more inconvenience to its neighbours than any other large public institution would occasion.

The establishment of psychopathic wings in connection with general hospitals, especially in those associated with centres of medical teaching, is probably the most acute psychiatric problem in Canada to-day. Psychiatry is the only medical specialty to the demands of which the general hospital, with a few notable exceptions, has not responded. The need of the general hospital for a psychiatric department is admitted, as is also the fact that psychiatry requires a more intimate association with other branches of medicine for assistance in elucidation and solution of its own problems. The fact that the C.A.M.C. was able to so satisfactorily care for its mental cases under the conditions outlined above, lends support to the statement that there is no insurmountable obstacle to operating a psychopathic department in close association with any large general hospital and only in this way can the civilian insane obtain the same advantages in regard to humane and rational treatment as the military cases have received.

SHAKESPEARE AS A GUIDE IN THE ART AND PRACTICE OF MEDICINE

BY SIR ST-CLAIR THOMSON, M.D.

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INTRODUCTORY.—Thomas Sydenham (1624-1689), the first great physician of the seventeenth century to profit by the work of Harvey and the Baconian method of reasoning, was asked by Sir Richard Blackmore what books of medicine he should study "Read 'Don Quixote'," was the unexpected reply, "it is a very good book; I read it myself still." The great Sydenham, in one telling sentence, thus taught us physicians that we will be incomplete practitioners of our art, if we limit our studies to the science of our calling. In the present day, with so much talk of the progress of scientific medicine, of the exact methods of the laboratory, of team work, of a state medical service and so forth, it is important for us to listen to works of wisdom which were written not for a day but for all time. Let us follow the advice of Sydenham, but by turning to the teaching of the great contemporary of the author of "Don Quixote". Cervantes and Shakespeare died on the same day, April, 23rd, 1616. Sydenham was born eight years later and the above story shows that our great poet was still awaiting the recognition of posterity; for if any of us, to-day, had to name the one author which every medical man should study deeply, with diligence and delight, surely it would be the greatest of our great Englishmen, William Shakespeare, who died three hundred and three years ago.

The Genius of Shakespeare.—This "myriad-minded man" astonishes everyone who is once attracted by his genius, and various professions and callings have produced books to show that he must have been a soldier, a sailor, a lawyer, an astronomer, a divine, a printer, a courtier, a traveller, a sportsman, an angler, a bird fancier, and a gardener, as well as a poet, actor and playwright!

An address in medicine delivered in Toronto before the Ontario Medical Association, May 28th, 1919.

Medicine in Shakespeare's Time.—His knowledge of the medicine of his own time, his approval of the better part of it, and his reasonableness in praising principally the physiological side of it, is remarkable when we remember that he lived in an age when witchcraft was firmly believed in; when amulets were worn to ward off disease, and charms, incantations and philtres were used for the cure of it. In Shakespeare's day the astrologer was ready to raise a devil or cast a horoscope for a fee. Pills made of the skull of a man who had been hanged, a draught of spring water from the skull of a man who had been murdered, the powder of a mummy, the oil of scorpions, the blood of dragons, the entrails of wild animals, and all sort of filthy dejecta were in those times recommended for special diseases, while tumours were supposed to be cured by stroking them with the hand of a dead man. It was only in the year 1616, and in the very week preceding Shakespeare's death, that William Harvey first enunciated his memorable discovery to the Royal College of Physicians, in these remarkable words:—"Whence it follows that the movement of the blood is constantly in a circle, and is brought about by the beat of the heart."

I refer to this birth of modern medicine, and to the primitive practice of Elizabethan days, so that we can better appreciate the marvels of our greatest genius. But having dealt elsewhere with his knowledge of medicine, chiefly with the scientific side of it,* I propose this evening to consider how this layman can help us physicians in the art and practice of our calling.

Esteem of our Profession.—Cerimon in *Pericles* is both a physician and a nobleman, so that the good social status of the medical man is thus accepted and illustrated. No nobler panegyric of our profession could be written than that put in the mouth of Cerimon:—

Cerimon.

*By turning o'er authorities, I have
(Together with my practice) made familiar
To me and to my aid, the blest infusions
That dwell in vegetives, in metals, stones;
And can speak of the disturbances that Nature
Works, and of her cures; which doth give me
A more content in course of true delight
Than to be thirsty after tottering honour,
Or tie my treasure up in silken bags,
To please the fool and death.*

Pericles, iii, 2.

It is to be noticed that Shakespeare, in these lines, recognizes, even

**Transacs. Medical Soc., London. Vol. xxxix., 1916.*

in those Elizabethan days of superstition and wholesale drug-taking, the *vis medicatrix naturæ*, and gives the quite modern idea of curing our patients:—

With good advice and little medicine.

Henry IV, Part II, iii, 1.

He repeatedly indicates his belief in the efficacy of our efforts:—

*Give physic to the sick, ease to the pain'd,
The patient dies, while the physician sleeps.*

Lucrece, 129-130.

although we can never escape final defeat:—

*But I consider,
By medicine life may be prolong'd, yet death
Will seize the doctor too.*

Cymbeline, v. 5.

Medical Note-taking.—A justification for our case-books is found in the wise note-taking of the cautious Scotch doctor who attends Lady Macbeth,—

*I will set down what comes from her to
satisfy my remembrance the more strongly.*

Macbeth, v. 1.

And further commendation of note-taking is found in one of the sonnets,—

*The vacant leaves thy mind's imprint will bear,
Look, what thy memory cannot contain.
Commit to these waste blanks, and thou shalt find
These children nurs'd, deliver'd from thy brain,
To make a new acquaintance of thy mind.
These offices, so oft as thou wilt look,
Shall profit thee, and much enrich thy book.*

Sonnet 77.

Patients sometimes appear to resent our inquiries when we take notes on their past medical history. Shakespeare fully approves our custom,—

*There is a history in all men's lives,
Figuring the nature of the times deceas'd:
The which observ'd, a man may prophesy,
With a near aim, of the main chance of things
As yet not come to life.*

Henry IV, Part II, iii, 1.

Bedside Manner.—When called to a case we doubtless begin by the simplest and most friendly investigation, in the manner of Pinch in the *Comedy of Errors*, who, although an irregular practitioner, had quite the bedside manner when he says,—

Give me your hand and let me feel your pulse.

IV, 4.

Functional and Organic Disease.—We will have to distinguish between early disordered function and disease, as is well shown in the following dialogue,—

King Henry.

*Then you perceive, the body of our kingdom,
How foul it is; what rank diseases grow,
And with what danger, near the heart of it.*

Warwick.

*It is but as a body, yet, distemper'd,
Which to his former strength may be restor'd,
By good advice, and little medicine.*

Henry IV, Part II, iii, 1.

Physical and Mental Conditions.—With all our patients we should never forget they are sick folk, so that we will neither judge them as we would healthy men, nor let ourselves be carried away by their morbid fears. Lady Constance recognizes this in herself when she exclaims,—

For I am sick and capable of fears.

King John, iii, 1.

King Lear excuses the behaviour of his son-in-law by attributing much of his conduct to physical conditions,—

*No, but not yet;—may be, he is not well:
Infirmity doth still neglect all office,
Wherein our health is bound; we are not ourselves,
When nature, being oppress'd, commands the mind
To suffer with the body: I'll forbear;
And am fallen out with my more headier will,
To take the indispos'd and sickly fit
For the sound man.*

King Lear, ii, 4.

Even when driven nearly mad, poor Lear seeks for a pathological explanation of his daughter's ingratitude,—

*Then let them anatomize Regan; see what breeds about her
heart. Is there any cause in Nature, that makes these
hard hearts.*

King Lear, iii, 6.

Digestion.—Supposing we find that the case is one of digestive trouble, the following regulations of Shakespeare must be remembered,—

Unquiet meals make ill digestions.

Abdess in Comedy of Errors, v. 1.

*In food, in sport, and life-preserving rest,
To be disturb'd, would mad or man or beast.*

Abdess in Comedy of Errors, v. 1.

*Now good digestion wait on appetite,
And health on both!*

Macbeth, iii, 4.

Some cases of dyspepsia may be benefitted by a stroll in the open air soon after meals. Patroclus addressing, on behalf of his chief, the princes who made an afternoon call, says,—

*He hopes it is no other
But, for your health and your digestion sake,—
An after-dinner's breath.*

Troilus and Cressida, ii, 3.

Fainting.—In the treatment of an ordinary fainting attack, how slow is the willing but untrained public to act on the first principle so well expressed by Shakespeare three hundred years ago in the following lines:—

Stand from him, give him air; he'll straight be well,

Henry IV, Part II, iv, 4.

*So play the foolish throngs with one that swoons;
Come all to help him, and so stop the air
By which he should revive.*

Measure for Measure, ii, 4.

Open-air Treatment.—Three centuries before the profession had thought of open-air treatment, Shakespeare had advised,—

The most wholesome physic of thy health-giving air.

Love's Labour's Lost, i, 1.

and recommended it as one of Nature's best restoratives,—

I pray you give her air,

Gentlemen,

*This queen will live; nature awakes; a warmth
Breaths out of her.*

Pericles, iii, 2.

*His highness yet doth speak; and holds belief,
That, being brought into the open air,
It would allay the burning quality
Of that fell poison which assaileth him:
Let him be brought into the orchard here.*

King John, v, 7.

Then, on being carried into the orchard of Swinstead Abbey, King John's first exclamation is,—

— *Ay, marry, now my soul hath elbow-room.*

Change of Scene and Climate.—The advantages of travel, a sea voyage, or change in surroundings, particularly in neurasthenia, are brought to our recollection by the King of Denmark when speaking of the projected trip to England of his somewhat trying step-son, Hamlet,—

*Haply, the seas, and countries different,
With variable objects, shall expel
This something-settled matter in his heart*

Hamlet, iii, 1.

Mirth and Distraction.—When considering therapeutic measures we not uncommonly meet with a case which only requires the following pleasant prescription,—

*For so your doctors hold it very meet,
Seeing too much sadness hath congeal'd your blood,
And melancholy is the nurse of frenzy;
Therefore they thought it good to hear a play
And frame your mind to mirth and merriment,
Which bars a thousand harms and lengthens life.*

The Taming of the Shrew, Induction, Sc. 2.

Recreation.—If recreation is neglected there must ensue depression, ill-health, and susceptibility to infection and disease,—

*Sweet recreation barr'd, what doth ensue
But moody and dull melancholy,
Kinsman to grim and comfortless despair,
And, at her heels, a huge infectious troop
Of pale distemperatures and foes to life?*

Abess in A Comedy of Errors, v, 1.

How wise, therefore, is the following joyous resolution,—

*Let me play the fool,
With mirth and laughter let old wrinkles come;
And let my liver rather heat with wine,
Than my heart cool with mortifying groans.
Why should a man, whose blood is warm within,
Sit like his grandsire cut in alabaster?
Sleep when he wakes? and creep into the jaundice
By being peevish?*

Merchant of Venice, i, 1.

Jaundice.—The last quotation may help to remind us that

depressing emotions should be looked for as causes of jaundice or intestinal toxæmia, and this is also referred to in the line,—

What grief hath set the jaundice on your cheeks?

Troilus and Cressida, i, 3

Alcohol.—Our patients—at least in damp, not to say, wet England—are apt to ask our advice on the subject of alcohol. It is as impossible to saddle Shakespeare with extreme views in regard to alcohol, as it is in reference to any other subject on which there is no finality. He is too great an artist, and too deep a philosopher, to be didactic. He is certainly no advocate of intemperance. Total abstainers may claim him as a supporter on the strength of his commendation of “Honest water, which ne’er left man i’ the mire” (*Timons of Athens, i, 2*), a quotation which is inscribed on the fountain erected in Stratford-on-Avon by American admirers. But he mitigates this commendation with the proviso that water is “that which is too weak to be a sinner”, and the rigid prohibitionist may be met with the well-worn quotation, “Dost thou think because thou art virtuous there shall be no more cakes and ale?” Shakespeare repeatedly paints in vivid colours the loathsomeness and degradation of alcoholic excess, and he is evidently in favour of temperance. How often have we to urge our patients to,—

*Ask God for temperance; that's the appliance only
Which your disease requires.*

Henry VIII, i, 1.

Wine is praised, but always with discretion,—

*Come, come, good wine is a good familiar creature, if it be well used;
exclaim no more against it.*

Othello ii, 3.

*Good company, good wine, good welcome
Can make good people.*

Henry VIII, i, 4.

I am not sure if here, in Canada, you had a No-treating Order, or even know what it means. Well, during the war, in the Motherland, in order to reduce the unnecessary consumption of alcoholic beverages it was ordained by the Defence of the Realm Act that it was illegal and punishable for any man to stand another a drink. Cassio would have welcomed this order, for when Iago says to him, “Come, lieutenant, I have a stoop of wine,” he replies, “Not to-night, good Iago; I have very poor and unhappy brains for

drinking; I could well wish courtesy would invent some other custom of entertainment." (*Othello*, ii, 3). Another character (Hostess Quickly) did not require a No-treating clause to support her when she said, courageously,—

*I'll drink no more than will do me good,
For no man's pleasure, I.*

King Henry IV, Part II, ii, 4.

Diet.—Shakespeare tells us that over-eating and starvation are equally unhealthy. Nerissa, in the *Merchant of Venice* exclaims, "For aught I see they are as sick that surfeit with too much, as they that starve with nothing" (i, 2); and the British belief in plenty of beef is somewhat shaken by Sir Andrew Aguecheek when he says,—

*I am a great eater of beef,
And I believe that does harm to my wit.*

Twelfth Night, i, 3.

We can agree with the Second Lord in *All's Well That Ends Well* (iii, 1), when he asserts,—

*Second Lord,
But I am sure, the younger of our nature,
That surfeit on their ease, will day by day,
Come here for physic.*

All's Well That Ends Well, iii, 1.

Tobacco.—How glad would we be to have Shakespeare's opinion on tobacco! Unfortunately, I find no mention of it, though snuffing is referred to.

Sleep.—There is one function of the *mens sana in corpore sano* which I never appreciated to its full value until taught by Shakespeare, and that is the importance of sound, sufficient and regular sleep. He shows a profound regard for the honey dew of slumber, great Nature's second course, chief nourisher in life's feast, the balm of broken senses, the best of rest, Nature's soft nurse, the season of all natures—as he lovingly describes it. He praises death because it gives us "silence and eternal sleep" (*Titus Andronicus*, i, 2). Indeed, it has been suggested that the poet himself must have suffered from sleeplessness, so vividly does he describe the horror of insomnia, so wisely does he regard the invoking of sleep, and so warmly does he praise the value of being able to steep our senses in forgetfulness. These readings impel me to suggest that we might all take a greater care and interest in this balm of hurt minds,

sore labour's bath, and that we often fail to appreciate the great value of Nature's second course in the cure of disease.

*Sleep that knits up the ravell'd sleeve of care,
The death of each day's life, sore labour's bath,
Balm of hurt minds, great nature's second course,
Chief nourisher in life's feast.*

Macbeth, ii, 2.

*The best of rest is sleep,
And that thou oft provok'st; yet grossly fear'st
Thy death, which is no more.*

Measure for Measure, iii, 1.

*O sleep! O gentle sleep!
Nature's soft nurse! how have I frighted thee,
That thou no more wilt weigh my eyelids down
And steep my senses in forgetfulness?*

Henry IV, Part II, iii, 1.

For sleep to be beneficial a man must be able to "thank God for his happy dreams," in which "the slumber of the body seems to be the waking of the soul", as opposed to what Macbeth calls "the affliction of those terrible dreams that shake us nightly" (iii, 2).

We should frankly tell our patients that the sweat of industry is the best soporific,—

*Come; our stomachs
Will make what's homely, savoury; weariness
Can snore upon the flint, when rusty sloth
Finds the down pillow hard.*

Cymbeline, iii, 6.

Suggestion.—We all practise suggestion, even unconsciously. Not a prescription is written which is not fortified—or weakened—by it; not a dose of medicine is swallowed without it; not a prognosis given which is not enhanced or else enfeebled by it. Shakespeare tells us,—

*They'll take suggestion as a cat laps milk,
They'll tell the clock to any business that
We say befits the hour.*

The Tempest, ii, 1.

and we all know that Hamlet fooled poor Polonius by suggestion. Even in the pain of old scars, the influence of suggestion can be exercised. Marcius says,—

*I have some wounds upon me and they smart
To hear themselves remember'd.*

Coriolanus, i, 9.

and this remarkable power may be utilized to resist even the onset of death,—

*Thy conceit is nearer death than thy powers.
For my sake, be comfortable;
Hold death awhile at the arm's end.*

As You Like It, ii, 6.

Encouragement.—We can never practise medicine very successfully unless possessed with courage and the art of inspiring it. Our fellow men are not themselves,—

*When nature, being oppress'd, commands the mind
To suffer with the body.*

and therefore we must encourage them with Iago's words,—

*How poor are they that have not patience!
What wound did ever heal but by degrees?*

Othello, ii, 3.

Sympathy.—It is a truism to recall that a large part of the physician's power lies in his capacity for sympathy. The loneliness of those who suffer is chiefly alleviated by the understanding and fellow regard which it is our duty and happy privilege to dispense,—

*Who alone suffers, suffers most i' the mind,
Leaving free things and happy shows behind;
But then the mind much sufferance doth o'erskip
When grief hath mates, and bearing fellowship.*

King Lear, iii, 6.

We should anticipate a sick man's fears and we will be quicker in getting in sympathy with a sufferer if we detect that he shares Macbeth's feeling that,—

Present fears are less than horrible imaginings.

Macbeth, i, 3.

We may have to tell a patient that,—

The fault, dear Brutus, is in ourselves not in our stars.

Julius Cæsar, i, 2.

when we don't get well quicker, and his self-resistance may be raised by reminding him that,—

*Our remedies oft in ourselves do lie,
Which we ascribe to heaven.*

All's Well That Ends Well, i, 1.

But stern philosophy such as that which tells us that,—

*Men must endure
Their going hence, even as their coming hither,
Ripeness is all.*

King Lear, v. 2.

is best kept for ourselves and our friends when in robust health!

Needless to say, the important thing is to avoid being merely platitudinous, and see that we do not attempt to “patch our grief with proverbs” (*Much Ado About Nothing*, v, 1), for,—

*Every one can master a grief, but he that has it.
Much Ado About Nothing, iii, 2.*

After all,—

*'Tis all men's office to speak patience
To those that wring under the load of sorrow;
But no man's virtue, nor sufficiency,
To be so moral when he shall endure
The like himself.*

Much Ado About Nothing, v, 1.

Hope.—The adage “while there's life there's hope” is as old as the world. *Dum spiro spero.* Shakespeare reminds us that,—

*The miserable have
No other medicine, but only hope;
I have hope to live and am prepar'd to die.
Claudio in Measure for Measure, iii, 1.*

*True hope is swift, and flies with swallow's wings;
Kings it makes gods, and meaner creatures kings.
Richard III, v, 2.*

Prognosis.—Next in importance to diagnosing his case correctly, a patient looks to us for guidance by our prognosis. Now Shakespeare advises that,—

*Since the affairs of men rest still uncertain,
Let's reason with the worst that may befall;
Julius Cæsar, v, 1.*

because,—

*To fear the worst oft cures the worst.
Troilus and Cressida, iii, 2.*

In other words, let us always anticipate the worst that may happen, but not expect it.

On the difficult and painful duty so often laid upon us, of giving a gloomy prognosis, what better guide of conduct can a physician have than that given by Shakespeare?—

*Though it be honest, it is never good
To bring bad news; give to a gracious message
A host of tongues; but let ill tidings tell
Themselves, when they be felt.*

Antony and Cleopatra, ii, 5.

He also advises us that we might often spare ourselves the pain of breaking bad news, and our patients the shock of hearing it, if we do but remember that,—

*He that but fears the thing he would not know,
Hath, by instinct, knowledge from others' eyes
That what he fear'd is chanced.*

Henry IV, Part II, i, 1.

and often we must sadly feel that,—

*Yet the first bringer of unwelcome news
Hath but a losing office; and his tongue
Sounds ever after as a sullen bell,
Remember'd knolling a departing friend.*

Henry IV, Part II, i, 1.

Old Age.—The diseased conditions peculiar to old age demand the consideration of all of us. The characteristics of our "sad humanity" (*Sonnet 65*), as it falls into the "sere the yellow leaf" (*Macbeth, v. 3*), and "declines with the vale of years" (*Othello, iii, 3*), are wistfully, sadly and pitifully described by Shakespeare. "Old men forget" (*Henry V, iv, 3*), and we should be considerate for their memories. Age may reveal a "poor, infirm, weak and despised old man," like King Lear (*Act iii, Sc. 2*), and we must be tender to them. They may be foolish or garrulous, and we must be tolerant,—

I am a very foolish fond old man.

*You must bear with me;
Pray you now, forget and forgive; I am old and foolish.*

King Lear, iv, 7.

*A good old man, Sir; he will be talking; as they say, when the age
is in, the wit is out.*

Much Ado About Nothing, iii, 5.

Shakespeare reminds us that although the seniors should attract "that which should accompany old age, as honour, love, obedience,

troops of friends" (*Macbeth*, v, 3), still, the physical characteristics of increasing years are not always alluring. The Chief Justice tells poor Sir John Falstaff very rudely that his appearance of age no longer tallies with his young and joyous spirit,—

Chief Justice. *Do you set down your name in the scroll of youth, that are written down old with all the characters of age? Have you not a moist eye? a dry hand? a yellow cheek? a white beard? a decreasing leg? an increasing belly? is not your voice broken? your wind short? your chin double? your wit single? and every part about you blasted with antiquity? and will you yet call yourself young? Fie, fie, fie, Sir John!*

Henry IV, Part II, i, 2.

Death.—Before "we have shuffled off this mortal coil" and start for,—

*The undiscover'd country, from whose bourn
No traveller returns.*

Hamlet, iii, 1.

we are reminded by Shakespeare that,—

*Yet in this life
Lie hid more thousand deaths; yet death we fear,
That makes these odds all even.*

Measure for Measure, iii, 1.

and he comforts us all by declaring that "the sense of death lies most in apprehension" (*Ibid*, iii, 1).

Should we strive to prolong life in the old when afflicted with hopeless forms of disease? Do we not sometimes feel inclined to echo the exclamation of the Earl of Kent in regard to poor, old, worn-out Lear?—

*Vex not his ghost; O, let him pass! he hates him,
That would upon the rack of this tough world
Stretch him out longer.*

King Lear, v, 3.

Life.—And so in his profound knowledge of human life and human nature, from the day,—

*When we are born and cry that we are come
To this great stage of fools*

King Lear, IV, 6.

until the

*Last scene of all
That ends this strange eventful history.*

As You Like It, ii, 7.

we see why Shakespeare is, and always must be, one of the greatest, masters of medicine. His astonishing acuteness of observation

his familiarity with the ways and thoughts of frail humanity, his discrimination of our diseases according to age, sex and circumstance, his sensitive regard for "life's fitful fever" (*Macbeth*, *iii*, 2), his sweet reasonableness and deep human sympathy, his profound knowledge of those parts of physiology and pathology which may be studied in the daily life of the street, the market, the tavern, the court, the camp or the home, are subject to no errors of investigation; they are eternally true. Skakespeare has epitomized the whole gamut of human life in the twenty-eight lines pregnant of the humourously melancholy Jacques,—

*All the world's a stage,
And all the men and women merely players:
They have their exits and their entrances;
And one man in his time plays many parts,
His acts being seven ages. At first the infant,
Mewling and puking in the nurse's arms.
Then the whining school-boy, with his satchel,
And shining morning face, creeping like snail
Unwillingly to school. And then the lover,
Sighing like furnace, with a woful ballad
Made to his mistress' eye-brow. Then a soldier,
Full of strange oaths, and bearded like the pard,
Jealous in honour, sudden and quick in quarrel,
Seeking the bubble reputation
Even in the cannon's mouth. And then the justice,
In fair round belly with good capon lin'd,
With eyes severe and beard of formal cut,
Full of wise saws and modern instances;
And so he plays his part. The sixth age shifts
Into the lean and slipper'd pantaloon,
With spectacles on nose and pouch on side;
His youthful hose, well sav'd, a world too wide
For his shrunk shank; and his big manly voice,
Turning again towards childish treble, pipes
And whistles in his sound. Last scene of all,
That ends this strange, eventful history,
Is second childishness, and mere oblivion,—
Sans teeth, sans eyes, sans taste, sans everything.
As You Like It, *ii*, 7.*

A Master of Medicine.—Hippocrates tells us that life is short, art is long and experience is fallacious. The science of medicine progresses, but human nature remains the same, it cannot be altered by Acts of Parliament, and the foundations of physiology are fixed. Shakespeare's plays will be read by physicians when every medical treatise of the present year will be lying on the dust heaps of literature, and the works of this master of medicine will continue to be studied by future generations until "there shall be no more death, neither sorrow nor crying, neither shall there be any more pain".

TREATMENT OF BURNS BY TINCTURE OF IODINE

BY O. F. MERCIER, M.D.

Montreal

FOR a couple of years past, convinced by an accidental experience, of the value of the tincture of iodine in the treatment and cure of burns, I have adopted its use systematically in my hospital service, as well as in my civil practice, and to-day, after different experiences in a number of varying cases from the slightest to the most severe, I thought it would be advisable to appear here before your honourable meeting and give you my sincere opinion upon this treatment.

I have said that my first experience was an accidental one, and I should have added that this experience was obtained upon myself.

One day, I had the misfortune to burn a small spot of about three quarters of an inch diameter upon the palmar surface of my left hand; this burn was of the second degree and excessively painful. Having on hand in my office a small bottle of the 10 per cent. tincture of iodine, I covered the burn with it. Of course, the application was painful, but I felt immediately a complete relief; it stopped the pain at once and the next morning, I was so well that, having some operations to perform at the Notre-Dame Hospital, I was able to attend to my duty and operate that morning upon several cases which were on the list, and that without the least pain. I could wash, brush my hands, keep them covered with the rubber gloves for a few hours, without any inconvenience, and the blister never burst, but dried up in two or three days, leaving under it a tissue of new formation of normal colouration and suppleness.

Judging from this result, and not knowing that this treatment had already been tested by Baumgarten in France, I started using it systematically in the Notre-Dame Hospital, having in my mind that, if it could do for a small thing, most probably it would be satisfactory in more severe cases. The result, fortunately, con-

Read at the fiftieth annual meeting of the Association, Quebec, June, 26th, 1919.

firmed to the utmost my expectations, and to-day I am here in a position to tell you that I consider it to be the best treatment I ever used against this accidental disease.

As far as I can understand, the treatment was rejected in France on account of the fear that it might be injurious to the kidneys, but in all the different cases in which I have used it, I have constantly watched closely the function of that organ, and in no case could I detect any trouble, clinical, functional or chemical. In fact, in one of my last cases, the patient was a young lad of about twelve years old, who was certainly burnt over at least the half of the surface of his whole body, and even in that case, no trouble whatever could be detected with his kidneys.

Another objection that one can raise is the pain caused by the application. I have of course to admit that the treatment is painful during its application, and for the few minutes (say four or five) following it, but as soon as the pain so caused is over, the pain that always accompanies the burn is completely suppressed and the patient feels a complete relief. In one case to which I would like to draw your attention, a woman of about forty years old, having had her two arms, forearms and hands badly burned to the second degree, and in some spots, going as far as the third degree, I tried treating her on one arm with antiseptic and anæsthetic ointment, and on the other one, with the tincture of iodine, and she herself asked to have both arms treated with the iodine, feeling so much difference in the comfort caused by the above treatment compared with the ordinary antiseptic applications.

At about the same time, a man was brought into the hospital, ward St. Joseph, with a bad burn covering the surface of his face and head, neck and shoulders, hands and wrists. In this case, I started the iodine treatment immediately after his entry in the hospital. The temperature which went high from the start, 104 degrees, was brought down to the normal in four days. Eight days after the accident, the crust formed by the burn, epidermis hardened by the fluid, started to fall off and fourteen days after the accident, he was able to leave the hospital completely cured, with a fine pink, supple, new skin, replacing all the one that was destroyed by the burn.

I have had since then three other cases of the same seriousness, location and surface, and the three responded faithfully to my treatment and developed and recovered in the same way. In fact, in the Notre-Dame Hospital, the treatment demonstrated so well

its own value, that it has been adopted by all my confrères of the hospital, and it is now systematically used there.

I think that, in our day, it would be very hard to find a surgeon, a medical doctor, or any scientific man, who would not admit that iodine is one of our best antiseptics, if not the very best of all. Its power of penetration into the skin, its power of destruction of the germs, are the two qualities which place it at the head of the list. Another advantage of it is that, if you want to have all its effectiveness and if you use it on the skin, you can apply it just as well and even better on a skin that has not been previously washed, because the alcohol in which the drug is dissolved is quite sufficient for the cleaning and would have a better effect on a dry or greasy skin, than on a skin covered with soap and water.

The same problem presents itself in the treatment of burns. Everybody knows how painful, difficult and long was the first dressing in all the other treatments made upon the burnt surface.

The cleaning of the wound, the removing of dirt, burnt epidermis and so on, was practically impossible, not only from the fact of its own difficulty, but also from the fact of the pain occasioned by that long and tedious manipulation. With this new treatment, there is nothing of that sort; the dressing is so simple, so quick, that in a few minutes, it can be made with all its effectiveness. Of course, I observed that to use this treatment, one must follow a very precise and systematic technique, because one has to remember that the application is painful, and that the pain caused by that application will only last a few seconds, and that besides, the application must be liberally made, so I remarked that the tincture of iodine must be largely spread over all the wound, I should say, in one jet. The way to do it is very simple. Take a piece of absorbent cotton, soak it heavily in the tincture, holding it with a forceps, and put on a coat of it, liberally, all over the wound. If the patient is too nervous and too sensitive, give him first a hypodermic injection of morphine, or even it may be worth while giving him gas-anæsthesia. The worst would be if, being afraid of hurting him, you should make the application lightly, gently, with a tampon not sufficiently soaked with the preparation, and apply it spot by spot, small surface by small surface, increasing so, the time required for dressing, and instead of taking just a few seconds, or at the most two or three minutes to complete the whole thing, you would take, say fifteen or twenty minutes, and then have a wound that would not be properly covered and soaked with the fluid. I insist upon this point because, every time I entrusted the

treatment to the hands of one of our nurses or sisters, they all made the same error, and I had to insist, in order to convince them, and even, at times, do it myself before them.

Another very important point is the quality and strength of the preparation. I observed that the best is the one of the French Iodex, or the 10 per cent. solution in pure alcohol, 90 degrees. The alcohol must be very pure, and everybody will easily understand that it would be very dangerous to use tincture of iodine prepared with methylated spirit, or the one that we have on the market under the name of "Columbian". This latter would not only irritate and injure the tissue, but would be dangerous by its absorption and that to the utmost.

You will most probably enquire what sort of dressing is to be applied, after the coat of tincture of iodine has been spread over the wound. A simple sterile dressing with gauze compresses, and a bandage to keep it on, is quite sufficient. In fact, I have remarked that the solution is a dressing in itself, and in a few cases, I ventured to use no dressing at all, besides the liquid application, and kept the part open. The explanation is very simple; the wound, after the application, covers itself with a thick, brown crust, which protects the raw tissues completely.

A very interesting experience which contributes to the illustration of the effectiveness of the treatment is the fact that in cases of burns of the face, I could not, of course, apply it on the eye-lids, fearing to injure the globe of the eye, and I confined myself to using around there a preparation of argyrol or sylvol, but in every case, the whole face was already healed many days, while the eyelids were still unhealed, and the worst of it was that the eyelids healed slowly, giving rise to ectropion. The treatment must be done once every day.

As I said above, when the above-mentioned crusts fall, they give way to a fine new tissue, pink, neat, having all its suppleness, and in no case had I any of those retractile scars which, ordinarily, as everybody knows, are one of the worst complications following burns. I have no doubt that the worst enemy is the infection, not only because it delays the cure, but also because it causes the pain, causes the general infection which generally shows itself by the regular and steady increase of temperature, loss of appetite, weakness and so on; and then gives way to the formation of that scar tissue, which in mostly all cases is bound to retract sooner or later. With this new treatment, nothing of the sort. After a few days, four or five, the temperature comes down to the normal and

this, gradually and steadily, and stays at the normal until the complete cure is over. The patient keeps his normal general condition of health; he sleeps very well all night, because the pain, which exists in every case treated by the other methods, is absent; in fact, the only pain is the one during the application, and it is easy to manage it, but as for the pain of the burn itself, there is none whatever.

The treatment, to have all its effectiveness, must be made as soon as possible following the accident. It is easy to understand that it is more difficult to disinfect an infected wound than to prevent the infection. This is a fact that I have always experienced, and I consider it to be of the highest importance.

If the method is used on burns of the first and second degree, it is a complete treatment and you do not need anything else, but as everybody knows, there may always be spots or surfaces where the burn would have gone more deeply, and attained the third degree, injuring the whole thickness of the skin, and sometimes the adipose tissue, and even the muscles. For those deep burns, I apply, just the same, the tincture of iodine in the same way as I do for the surrounding surfaces, but of course, after a certain time, the destroyed parts which have been killed by the fire, must detach themselves, and this surface of sphacelus leaves a wound more or less large, which has to be treated by the ordinary antiseptic dressings. To complete the cure and prevent the retractile scars, now is the time to appeal to grafting of new skin. This is what I do, using the Thiersch method.

In cases where the surface of the burn is covered by blisters, it is important not to open them, and to let them dry up under the effect of the iodine. They dry up in a few days and do not bring any complication whatever.

In a few cases, when the patient was too sensitive, or when for any other reason the pain was too great, I replaced the tincture of iodine by the vapours of nascent iodine, but of course, in every one of the cases, the first treatment was always made by using the tincture of iodine, in the way above described, and I used the nascent iodine only for the subsequent treatments, which must be applied then once a day, as in the case of the tincture.

I feel so highly convinced of the great and practical value of this treatment, that in coming before your meeting, I come with only one object in view, which is that of trying to popularize the method, knowing that it will be such a great help to this class of poor patients. When one imagines or represents to himself the

pain, the dangers of all sorts that followed these terrible accidents, when we were using most of the other treatments, it is easy to understand the amount of the services that would be rendered to our poor humanity, if it were possible to decrease in any degree, the said calamity. There is another question, which has in itself its own importance, and this interests mostly companies and employers. We all know the amount of responsibility that falls upon them under the law providing for indemnity to be given to employees in these cases. If by this method, it were possible to diminish the amount of incapacity resulting from the accident, I think it would become of great interest to accident companies and employers, that this method be generalized, it would save them certainly large amounts of money and it would, at the same time, prevent the employee from remaining a lame man for the rest of his life.

I would like to see all the manufacturers, and even the fire brigades knowing this fact, and knowing also that the best thing they can do for any one of their employees who should have the misfortune of having one of these terrible accidents, would be to have on hand a bottle of tincture of iodine, ready to be used as the first, the best of all emergency treatments, that could be applied to the case.

Only a few weeks ago, a case was brought to the hospital. A man, a labourer, burnt in the face, neck and head by an explosion of gasoline. I do not know whether it was from the fact that they had heard of the treatment, that they did it, but they did it at any rate. The patient sent to the hospital had only to be continuously treated along the same lines, and following the rules; in two weeks, he was in a condition to resume his work.

Whether it be for a small or a large burn, I insist that I consider this treatment to be the best. About two months ago, a child of twelve years old was brought to me as a private patient, after a burn covering certainly over half the surface of his body. I saw him in hospital only the next day after the burn, and some ointment, I do not know what kind, had already been used on it. Nevertheless, I ordered the iodine treatment. The poor little thing went on as well as possible for seven or eight days; the only pain endured was the one at the moment of the applications. Unfortunately, I had the parents against my treatment and I was obliged to submit to their desire. After two or three days, the parents realized what I had told them; that the dressings were nearly as painful as the iodine dressing, but that these dressings were not

quieting the pain of the burn. The temperature started going higher; the general condition of patient got worse and worse every day, and on the eleventh day the final result that I was expecting came, and the poor boy died.

Although at least half of the surface of the body was burnt, I feel convinced that if I could have kept on with the iodine treatment, I would have saved his life. But one fact remains with all its importance. Urine analysis, and taking the quantity of urine, was done every day during the applications, and I could not notice any clinical symptoms of kidney alterations, neither by the clinical symptoms nor by the laboratory reports.

Since the antiseptic value of iodine has been discovered and admitted by the profession in general, this chemical product has rendered us all sorts of services. We use it for disinfecting the skin before operations; we use it for disinfecting some surgical wounds; we treat the wounds with it, and everybody admits that its value is of the utmost importance. This is another application in which I sincerely believe it is going to prove again that it is the most important, the most powerful, and the most harmless of all our antiseptics.

NEXT to underfeeding, the appalling death rate from disease in Central Europe is said by a distinguished physician, who has just been travelling through these regions, to be due to lack of soap and all aids to cleanliness. Everywhere in Austria, Hungary, Poland, Bohemia, Russia and also Germany, typhoid, spotted typhus, dysentery, scurvy and tuberculosis have increased; modern hygiene is unable now to localize these scourges because of lack of disinfectants, linen and soap, and above all, need of disinfecting stoves or chambers, in which infected clothes can be placed and kept at a temperature to destroy the vermin which are propagators of spotted typhus. In Hungary, for instance, these disinfecting chambers exist, but there is no coal to heat them, whereas in Czecho-Slovakia there is the coal, but there are not the disinfecting chambers. The danger of travelling in Austria, Poland, the Ukraine and neighbouring parts of Europe is great, because it is impossible to prevent soldiers and civilians from being herded together in extremely crowded trains. Ordinary trains are breeding grounds for spotted typhus and other diseases because they are full of vermin-covered soldiers.

CRANIOPLASTY

BY CHARLES H. GILMOUR, M.B., M.R.C.S.

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IN the few minutes at my disposal this evening, I would like to direct your attention to a most interesting disability which has been brought from a rare to a common condition as a result of the recent war. Of the many surgical problems requiring special study and thought, none is more deserving than that relating to the repair of cranial defects.

Prior to the present war, a patient with a cranial defect was one of the most uncommon conditions to be seen by the general surgeon. As a result of the past four and a half years of intensive fighting we are faced with a condition that looms fairly large in the total surgical casualties. I am unable to get the exact percentage of cranial defects which are returning to Canada, but during my service at Orpington, I found on looking through the records that of a total of one thousand, three hundred and seventeen surgical cases in the hospital in the month of January, 1918, twenty-eight were suffering from cranial defects, or 2 per cent. of the total. This may be above the average, as in this case sixteen had been admitted directly from France and twelve had been transferred from Imperial hospitals in England.

The after-effects of wounds of the skull are pronounced, and the majority of cases suffer from permanent disability. Their symptoms are such that they are usually unable to take up any civil occupation permanently and may become subjects of Jacksonian epilepsy, or even in their morbid depressed mental condition, end in a state of traumatic insanity. I have said they are unable to take up any civil occupation permanently because I have seen several who have refused operation on account of a small opening which was deemed unnecessary at the time to repair, and return after some months of work, stating they were unable to carry on because of the pronounced local manifestations and asking that repair of the skull might be carried out so that they might be relieved

Read before the Ontario Medical Association, May 29th, 1919.

of the constant consciousness of deficient skull and the ever present fear of further injury to the pulsating depression.

Symptoms. In reviewing the histories of a large number of brain lesions, we find, following the injury, there has usually been a period of unconsciousness followed by different degrees of paralysis in one or more limbs or a complete hemiplegia. Depression is a prominent symptom and a constant dread of further injury to the pulsating cavity is found. Headache is present in all cases, sometimes severe and constant or in other cases intermittent and aggravated by exertion. Vertigo is always found which is increased by quick movements. The memory is poor and they cerebrate slowly. By studying the focal signs we can localize the part of the brain affected. Lesions of the cortical areas of the pre-central region are easily recognized. A paralysis of the corresponding muscles on the opposite side of the body being produced, at first the paralysed muscles are flaccid but spasticity soon develops. In some cortical lesion for reasons not yet understood the paralysis remains of the flaccid type. Rarely we find the whole motor area destroyed producing a cortical hemiplegia. More generally the lesion affects one or more groups of muscles, and occasionally all the muscles of one limb are paralyzed, producing a cortical monoplegia. In the course of time these paralyzes may partially clear up. Irritation of the motor centres may cause a localized Jacksonian epilepsy in the group of muscles on the opposite side of the body which are supplied by the centres implicated.

The fit may remain localized involving only one set of muscles or may spread to affect all the muscles of the body with accompanying unconsciousness and tongue biting. Accompanying the monoplegia or hemiplegia, we may have a motor aphasia when the motor speech-centre in Broca's convolution is implicated. In lesions which involve the posterior part of the superior and middle temporal convolutions, we may not find a definite word deafness; that condition in which the patient is unable to understand spoken words, though he may be able to read and speak. This symptom may not be present, because the cortical auditory centre is bilateral and one temporal lobe may be severally damaged without producing focal signs. Lesions of the occipital lobe if unilateral, cause an homonymous hemianopia; extensive bilateral occipital lesions will cause total blindness. In other cases, word blindness is formed from a lesion of the left angular gyrus. Lesions of the post central gyrus will show sensory changes of the parts corresponding the motor centres in the precentral gyrus. For example, an injury

over Rolandic area two inches to the left of the middle line would produce complete paralysis of right upper limb, motor aphasia with sensory changes showing in the loss of touch and joint sense. The compass test would show an increase on the affected side and astereognosis (that is, the loss of appreciation by touch of familiar objects) would be present. Lesions of the frontal cortex anterior to the motor centres, even if extensive, may produce few or no symptoms; occasionally there results a change in the temperament or intelligence of the patient. Sir James Purves Stewart has recently reported the following case. This patient sustained a through-and-through transfrontal wound, the bullet entering through one temporal fossa and passing out through the other; the only focal symptoms were a transient monoplegia of the right face which cleared up completely in a couple of weeks; shortly after, during convalescence, he ran away with a friend's wife. Uncharitable observers may perhaps be sceptical as to the traumatic origin of this incident. There is no history of a frontal lesion in the lady.

It is the purpose of this paper to discuss the repair of the cranial defects mentioned for the relief or alleviation of symptoms enumerated. In this series of cases, I have the records of twenty-two performed in my service at Orpington in 1917 and 1918 and thirty-five by Colonel Primrose and staff in the military wards of the Toronto General Hospital. In this series bone was used in twenty-eight cases and cartilage in twenty-nine cases. We do not propose to discuss here whether periosteum is simply a limiting membrane or has the power to reproduce bone, or whether the grafted bone is really viable and inherently carries its own osteogenic powers or merely acts as a scaffold along which the Haversian vessels grow, carrying with them osteoblasts and osteoclasts. Whatever is the ultimate fate of the graft, we do know from the all-important clinical standpoint, bone is a most excellent material with which to repair a cranial defect. The same may be said of cartilage.

That ancient proverb, "There is nothing new under the sun," is borne out when we find it recorded that Jobi Meekren in 1682 replaced a cranial defect with a piece of dog's skull which healed perfectly. He was later forced by the church to remove the graft under ban of excommunication.

In deciding which material, bone or cartilage, is to be used, the size and position of the defect must be studied, also the possibility of the patient having other disability. It is not infrequent to find a man with a cranial defect has also lost one leg or has received a

severe chest wound. Briefly, bone gives the greatest amount of support and can be securely moulded to close large defects, especially in the parietal region. On the other hand, cartilage will mould to the contour of the head better in the frontal and occipital regions and is more viable in the presence of infection.

Operation. A very careful preparation of the head must be carried out. In shaving the head, extreme precaution must be exercised not to leave any small cuts in the scalp in the vicinity of the scar. The head is now prepared by the usual iodine method. At the time of operation, the entire head is covered by two layers of gauze and a tourniquet applied tightly over this. If the tourniquet is properly applied, there will be a minimum amount of hæmorrhage from the scalp. If the scar is small and not too firmly adherent to the dura mater, a wide horse-shoe flap is preferable, but if the scar is large and thin and firmly adherent to a large surface of dura mater, it is best to excise the entire scar. In dissecting off this scar, particular care must be taken not to penetrate the dura. Should there be an escape of cerebro-spinal fluid, it should be immediately sutured. The pericranium is next isolated and reflected well back on the outer table by a crucial incision. This gives an excellent view of the field. The dura mater will be seen to be firmly adherent all around the edges of the inner table. This must be completely freed and any rough or sharp edges of bone rounded with bone forceps. It is most important that no projections are left which might cause a cortical irritation and future epilepsy. The outer table is now bevelled off for a distance of half an inch with an electrical burr, leaving the vascular diploe as a bed for the graft.

If it has been decided that cartilage is to be used, a vertical incision over the sixth, seventh and eighth costal cartilages is made, one inch external to the edge of the sternum and sweeping in a semi-circular fashion along the costal margin for two inches. This gives a free exposure. To remove the cartilages, a knife bent at an angle of 110 degrees is best. Grafts one half to two thirds the thickness of the costal cartilage are removed, care being taken to have the graft longer than the length of the cranial defect. To provide a bed for the grafts, a trellis-work of cat-gut is run through the pericranium from side to side and the grafts are threaded through this, their ends lying on the diploe. They are immobilized by chromic cat-gut, suturing the ends to the pericranium. The pericranium is now drawn over the graft as much as possible and the scalp sutured leaving a small drainage tube in one corner for twenty-four hours.

If bone is to be used, the diploe will be exposed as above. The leg having been prepared, the skin is reflected, leaving the inner surface of the tibia completely exposed. The graft with periosteum is now removed, the thickness of the outer table and the width of the tibia one inch longer than the length of the cranial defect. The crest of the tibia is not removed because this weakens it and a fracture might result. If the cranial defect is wider than the inner surface of the tibia, two pieces of graft may lie side by side. To immobilize the bone grafts, holes are drilled through the inner table of the skull through which chromic catgut is threaded and these pass through similar holes in the graft and are then tied. The pericranium is drawn over and the scalp sutured.

Conclusion. Following the repair of cranial defects, a marked improvement is seen in the temperament and intelligence of the patient. The melancholia and lack of interest disappear. The previous fits are relieved and the headache either entirely disappears or occurs only occasionally in a mild form. The patients gain in strength and they have a feeling of security previously lacking. I have followed the progress of a large number of these cases and find that from being invalids suffering from a permanent disability, they are able to earn a good living in any suitable capacity in the labour market.

REV. W. W. PERETT, the head of the Moravian mission at Hopedale, Labrador, announces that epidemic influenza, measles and small pox are working havoc throughout Labrador. Almost the whole population of some of the settlements has been wiped out within a few weeks. The village of Hebron lost eighty-six people out of a population of about one hundred, while the village of Okak lost two hundred and seven out of a population of two hundred and sixty-six. Altogether, four hundred and eleven persons perished of these diseases in the territory over which Mr. Perett has charge.

ON BACKWARD DISPLACEMENTS OF THE UTERUS

BY A. C. HENDRICK, M.A., B.M., F.R.C.S., F.A.C.S.

Assistant Gynæcologist, General Hospital, Toronto

UNTIL very recently there has been no definite doctrine in regard to "uterine displacements". though the importance of the subject to the practitioner and to the patient can hardly be over-estimated. The practitioner often attached undue importance to some discovered uterine displacement, indefinite, it is true, to his mind and experience; and many of the ills of the female sex, due more properly, to some other cause are attributed to the uterus being out of place.

It is with the object of attempting to make the doctrine a little more definite that this paper is written.

I propose to deal with the problem under the following headings:

1. To state the accepted usual position in the true pelvis of the normal adult virgin uterus.
2. To describe as clearly as possible the anatomical and mechanical reasons for this "position".
3. To explain the usual causes for any dislocation of the uterus from this position.
4. To define the usual symptoms.
5. Outline the treatment.

I. The usual position of the normal adult virgin uterus in the bony pelvis.

In the fully developed adult virgin the organ is a flattened pear-shaped body with an upper and larger free end, and a lower extremity which projects into the vagina, dorsal and ventral surfaces and right and left margins partially covered by peritoneum.

The uterus is usually described as consisting of a fundus, body, isthmus and neck or cervix, being three inches long, two inches wide and one inch thick.

The adult uterus does not occupy any definite fixed position in the pelvis but possesses a considerable range of mobility. The chief factors that influence its position being the bladder in front and the rectum behind. With these organs partially distended the uterus, between them, comes to lie approximately in the axis of that part of the true pelvis in which it is situated.

The ventral surface of the uterus is in contact with the bladder; when the bladder empties the fundus is directed forward and the ventral surface downwards. The result is a slight anteversion of the uterus, taking the axis of the pelvis as the "neutral line". Since this movement affects the fundus and body more than the more fixed cervix, there is a slight angle formed in the region of the isthmus on the ventral surface and this position is described as an ante flexion.

The uterus is seldom quite medial in position and may be rotated on its own axis. It is entirely in the true pelvis. The lowest portion of the cervix is about on the level of a plane joining the spines of the ischium, but slightly in front of, or behind this line, and slightly above a plane uniting the lower border of the symphysis pubis to the tip of the coccyx. However, gravity, posture and distension of the bladder or rectum influence this position slightly.

II. The anatomical and mechanical reasons of what factors keep the uterus in the position above described have been much debated, and it is proposed to show that the true solution is simplified by an extended knowledge of the development of the uterus and its neighbouring structures.

In the human embryo at about the beginning of the second month, a structure named the mesonephros or Wolffian body is well formed. This structure is composed of tubules and the Wolffian duct. It is the functional kidney in the amphibians (frogs), but only temporary in the reptiles, birds and mammals. Its function is later taken over by the permanent kidney, which arises from the hindmost segments of the Wolffian body.

The Wolffian body, in a human embryo of 5 mm. long, at the second month, projects as a prominent ridge under the peritoneum from the dorsal and lumbar regions of the coelom, near the mesentery of the gut, extending on each side of the coelom (body cavity), from the posterior cervical region, where the diaphragm is developed, to the pelvis behind, where the ridges become approximated. The forward projection of the peritoneal covering of the Wolffian body, after the atrophy of that body, contributes to the formation of the

plica vascularis, and the backward projection contributes to the formation of the genital cord.

To the inner side of the Wolffian body in the lower dorsal region lies the genital ridge from which the ovary will be developed. This ridge is also attached to the dorsal wall of the coelum by a mesentery—the genital mesentery.

This mesentery at its anterior end fuses with the Wolffian mesentery forming the plica vascularis, which becomes the future overico-pelvic ligament of the ovary. Its posterior extremity, with the mesentery of the Wolffian body, is continued to the inguinal region as the plica inguinalis, and later becomes the ovarico-uterine or ligament of the ovary, and the round ligament.

On the lateral aspect of the Wolffian body and near its anterior end arises the Mullerian duct, as a thickening of the coelomic epithelium. This soon shows a longitudinal depression, which, deepening at its posterior end, becomes converted into a funnel shaped depression the future ostium of the Fallopian tube. From the caudal end of this, a duct grows backward in close relation to the Wolffian duct.

In embryos, about the middle of the second month, the two ducts lie in a free fold—the uro-genital fold—projecting from the outer side of the Wolffian body, the Mullerian being to the outer side.

Behind the Wolffian body this fold, merging with the Wolffian body mesentery, passes on to the lateral wall of the contracted part of the coelomic cavity, which will later form the pelvis.

Here, the folds from opposite sides meet in the middle line. The four ducts are thus brought close together and are embedded in a mass of tissue, the mesenchyme, forming the genital cord, and thus dividing the pelvic coelom into two cavities, anterior or utero-vesical, and posterior or utero-rectal.

The Mullerian ducts as they pass into the genital cord cross over the Wolffian ducts and come to lie close together between them. Within the genital cord the Mullerian ducts fuse, but behind, the lumina remain separate for a time, and the fused walls terminate in an epithelial thickening. The Mullerian eminence is derived from the vaginal bulbs, and projects into the uro-genital sinus between the opening of the Wolffian ducts.

The upper free portions of the Mullerian ducts become the Fallopian tubes, while the fused portions form the foundation of the uterus and vagina. The vagina is formed from a solid down growth of epithelium from the vaginal bulbs which form the Mullerian

eminence. According to Quain, the epithelium of the Mullerian ducts gives rise only to the epithelium of the genital tracts. The musculature and connective tissue elements of the mucous membranes of the uterus and vagina are derived from the mesenchyme of the genital cord.

Chipman states: "The effective supports of the uterus are subperitoneal and are developed from the undifferentiated mass of mesenchyme of the genital cord." All authorities are agreed that at least the outer muscular coat of the adult uterus, all the smooth muscle, connective, and elastic tissue, surrounding the vessels and invading the basis of the broad utero-ischial, and round ligaments, are derived from the mesenchyme of the genital cord. The ontogeny of the genital cord is thus of supreme importance.

What are the effective supports of the uterus and vagina which are derived from the mesenchyme of the genital cord? It must be remembered that these supports are sub-peritoneal. From behind forward they are: The utero-ischial, utero-ischio-sacral or true utero-sacral ligaments which must not be confused with the peritoneal folds bounding the pouch of Douglas, *i.e.*, false utero-sacral ligaments. This paired structure, composed of smooth muscle, fibrous, and elastic tissue derived from the same source as similar tissue of the uterus, extends across the pelvis from one ischial spine to the other. It is attached laterally to the sides of the pelvis, in the erect posture being almost vertical, and medially to the perineal body. This latter attachment is due to the down-growth of the uro-rectal septum of Retterer. On the way across the pelvis they grasp the uterus firmly at the isthmus, creating and maintaining the vaginal fornices.

These structures have been named by Tweedy, of Dublin, the uterine tendons, which, one must confess, has some argument in its favour, an analogy being found in the muscle of Treitz. The *musculus suspensorius duodeni* has a distal attached end of smooth muscle fibres, an intermediate elastic portion, and a proximal attached portion, composed of both smooth and striated fibres.

The utero-ischial ligaments represent probably the dorsal attachments of the mesentery of the Wolffian body, *i.e.*, the dorso lateral region of the genital cord, and when the secondary caudal arterial arch, which passes lateral to the Wolffian duct, is developed it furnishes the root of the hypogastric artery. This structure, *i.e.*, the utero-ischial ligament, is further reinforced by the fibrous sheath of the vessels, also derived from the mesenchyme passing in from the side wall of the pelvis to the uterus and vagina.

III. Supports derived from the regression or fibrous degeneration of the levator ani group of muscles, when the caudal appendage is lost. It is a law that when a contractile tissue can no longer contract it degenerates into fibrous tissue. Examples may be found where muscular tissue is attached between two bony points which were once movable in relation to one another, but which are now fixed, for example—the sacro-spinous ligament, a portion of the coccygeus muscle, and the uro-genital diaphragm, a portion of the *transversus perinei profundus* muscle.

This support has been named by Sir Auckland Geddes, the arcus tendineus fascia pelvis. It is a stout, bow-string-like structure, attached anteriorly to the posterior aspect of the body of the pubis by three or four processes, and behind to the spine of the ischium and wing of the sacrum, and through the sacro-spinous ligament to the sacral bodies. Laterally it is attached to the parietal fascia, slightly above the origin of a few fibres of the levator ani muscle.

This arcus tendineus, if traced medially, is found to split into three layers: (a) The anterior or vesical layer passes to the bladder, and to the front of the urethra and vagina, forming the true ligaments of the bladder, *i.e.*, (1) the pubo-vesical and the lateral pubo-vesical binding the bladder firmly to the pubic bones, but separated near the medial borders to form the *cavum retzii*. (2) The urethro-vaginal ligaments which bind, inseparably, the urethra and vagina.

(b) Posterior or rectal layer passing behind the rectum.

(c) A medial layer, the recto-vaginal, which fuse across the medial place, intervening between the vagina and rectum and extending downwards to the perineal body, *i.e.*, the junction of the rectum with the anal canal.

The anterior or vesical layer blends around the lateral wall of the vagina with the medial or recto-vaginal. The arrangement of this fascia is the most important anatomical fact, for there is here a potential outlet to the pelvis for childbirth. The bladder and anterior vaginal wall are held firmly by the vesical layer, whilst the posterior vaginal wall can move freely on the recto-vaginal fascia.

The former can rise in the pelvis whilst the latter descends. The superior concave border of the junction of the vesical and recto-vaginal portions of this fascia fuses with the base of the utero-ischial ligaments, forming the cardinal ligaments of the uterus. These two structures, *i.e.*, the utero-ischial ligaments and the arcus

tendineus fascia, are the true anatomical supports of the uterus and vagina, and they resemble in action a fibro-muscular hammock. In the bony pelvis, however, there is a portion of the levator ani group of muscles which suffers only slight regression. This is the pubo-coccygeus muscle. It lies at a slightly lower level than the supports above described, and acts as an auxiliary support for any undue or sudden strain, and also as a sphincter for the urethra, vagina, and termination of the rectum.

IV. Knowing our anatomy should make the understanding of backward displacement of the uterus, or in fact any displacement, more intelligent.

(a) Backward displacement: 1. When the supports derived from the mesenchyme of the genital cord are chiefly involved. (a) Congenital, depending upon the orientation of the genital cord or pelvic septum, rare and unimportant.

(b) Shortening of the utero-ischial supports, for example, by infection and contraction. This is diagnosed on bi-manual examination—the ligaments are found tense and the cervix rather far back.

(c) Retro-version. Leaving out neoplasms and pelvic infiltrations, sub-involution is the commonest cause. The following symptoms are found:—(1) The patient is parous; (2) The supports, derived from the genital cord tissue, react in the same manner as the uterine tissue. Therefore, if the uterus is sub-involved, *a priori*, the supports are also.

Therefore, the utero-ischial ligaments soften in sub-involution and are ductile, allowing the cervix to descend in the pelvis. This places the heavy uterine body at a mechanical disadvantage and so it may turn backwards owing to the intra-abdominal pressure.

On bi-manual examination the cervix may be found closer to the examining finger and pointing downwards and forwards. The body is absent from the anterior fornix, and if retroflexion is added, may be felt in the posterior fornix.

V. *Treatment.* 1. Taking the commonest cause found, viz.: sub-involution: Treat the sub-involution. (a) By rest, tonic and hot douches. (b) Prevent further infection by repair of any old lacerations of the cervix or perineum. (c) Assist involution of the ligaments by pessary support. (d) After a fair trial of these measures, or when the uterus cannot be restored to its normal position bi-manually, open the abdomen, free the uterus, and perform the indicative operation, which in the child-bearing age

is usually round ligament shortening. If after the child-bearing age, do a fixation operation.

2. When the fascial supports are also at fault, the symptoms are different. There will usually be: (a) A cystocele; (b) A beginning prolapse of the uterus.

Treatment. Improve the general health. 2. Operative treatment, child-bearing age. (a) Repair old laceration. (b) Repair the cystocele. (c) Perform some round ligament operation. (d) After the menopause, a fixation operation is indicated.

P.S.—The paper was illustrated by lantern slides.

THE sum of one thousand pounds has been sent to London, England, by the committee of the Elizabeth Garrett Anderson Memorial Fund to endow a "Canada" bed in the Memorial Hospital, as the result of the generosity of subscribers and the receipts from the lecture given by Professor Stephen Leacock. An illustrated parchment, the work of the president of the Ontario Society of Artists, accompanies the donation.

Editorial

A NEW START

FOR some time past the unsatisfactory terms of the contract made years ago with our late publishers, have given rise to much trouble and dissatisfaction, not only to the editors and to the finance committee of the association, but also to the members who felt that the journal was not as representative as it might be, and that the advertisements were not as reputable as were to be desired in a journal bearing the name of our Association. Many efforts were made by the various committees appointed from time to time by the association to manage the journal, to obtain greater power of control, but all such efforts proved ineffectual until recently. A proposition placed before the members at the Quebec meeting, and referred by them to the finance committee with power to act, has now been accepted. The present publishers have been bought out, and a contract has been made with the printing house who in the past have done our printing, to continue to do so. A small committee has also been appointed to act for the Association, and control all the advertisements and to edit the journal. The finance committee are hopeful that within three years the journal will be free from debt, and on an entirely satisfactory basis.

With this October issue the new arrangements for publication go into force, and the new editorial board takes control. It is the desire of the new board to develop the journal in many ways and make it representative of the thought and work of the medical profession throughout Canada. To do so, however, it must have the active assistance of every member of the sub-editorial committee who were appointed

to represent the various provincial associations. The editorial committee in Montreal will meet regularly and frequently; they will supervise all papers presented for publication; any deemed not suitable will be returned promptly so as to afford the writer the opportunity of having it published in another journal; they will take complete control of all editorial matter; they hope to arrange for personally written retrospects in all departments of medicine and surgery by men who can speak with authority in their special departments. The committee will also be glad to receive communications from every medical society and provincial university in Canada, telling of work in progress or actually accomplished. It is their desire to make every number interesting and attractive. It may take time to accomplish all their plans, but the editorial board enter upon this task for the ensuing year with determination and hopefulness.

A MILITARY PSYCHOPATHIC HOSPITAL

MOST of the problems that confront the practitioner are met with either in simplified or in diversified form, in military medicine, and in many cases the methods which the army, from the necessities of its constitution, adopts, are helpful in the solution of the parallel questions of civilian life. The physician also profits from the rapid advances of Surgery in the last five years in almost every direction, and from the more exact knowledge that has been obtained through the specialization, in military hospitals, of certain forms of medical cases. Nowhere, however, has the army taught us more than in the field of psychiatry. One of the most urgent needs of the day in Canada is the establishment of proper psychopathic hospital wards for the care of insanity, especially in its incipient forms, in which the patients will be provided with the same up-to-date care and skilled nursing which is given to other forms of acute illness, with the minimum of restraint.

Such a psychopathic hospital with a capacity of 450 beds has been provided for military mental cases at Cobourg, and is now being most successfully operated. An extremely interesting outline of it is given in this issue in an article by Major E. H. Young. Among other points we learn from it that the patients have received an unusual amount of attention from medical experts, and that the social ostracism so often extended to those afflicted with psychoses has been avoided and the free mingling of the patients with the public has been encouraged. The returns to civil life already reported from the Cobourg Hospital in the twelve hundred cases received and cared for are most encouraging, and we look forward to even better results in the final figures.

WAX MODELS FOR THE NATIONAL WAR MUSEUM

THE necessity of keeping adequate records has been so frequently brought to the attention of the profession in recent years that new developments in this work should be welcomed. It is pleasing to note that the Government had the foresight to make a grant toward preserving the surgical records, in so far as plastic surgery is concerned, in such a substantial form as those models supply.

To those who are familiar with the models at the Army Medical Museum in Washington the value of such representations to show certain types of surgical conditions is only too well known. These are of especial interest at the present time as a means of comparing the results of the Civil War surgery with those of to-day. The nicely shaped stumps that were produced in the pre-antiseptic days, as evidenced by these models, show what good work was done under conditions which the modern surgeon would deem impossible.

No history of surgery can be complete without detailing the advances made in the different periods and the latter can be shown by drawings, photographs, x-ray plates, casts

and models. These different methods have all been used by the Canadian Army Medical Corps during the present war.

As this was the first big war in which facial surgery was given an opportunity to develop, it is important that a careful record should be made of it in all its phases. Probably no branch of surgery can show more advancement during the war than this. There was a wealth of material, which could be concentrated in one institution, such as can never occur in peace times. While advantage was not taken of this fact until the war was long under way, yet the very magnitude of the surgical work ultimately forced the authorities to establish special centres for the different types of injuries.

At the centres devoted to facial surgery, the surgeon, dentist, artist, and sculptor were collected to try and restore not only the functions destroyed by the ghastly wounds, but also to so bring back the appearance of the man to so near normal that he could re-enter the society he left on enlistment. This phase of the question is of great importance too from the economic standpoint, as a man, disfigured sufficiently to lessen his earning capacity, would always be a charge on the country according to pension regulations.

The authorities were fortunate in securing the services of Major Lessore to look after the work from the sculptor's point of view. He is an eminent British sculptor, who has an international reputation, and whose work is already familiar to many Canadians. These models of his will make a great addition to the War Museum both from a surgical and artistic standpoint.

THE RESOLUTIONS PASSED AT THE QUEBEC MEETING

THE usual number of resolutions were submitted to the annual meeting of the Association. It was a pleasure to commend the Government for at last establishing a De-

partment of Public Health. The members also went on record as being willing to assist the Government in the choice of the Deputy Minister. That the Government has since chosen wisely in this connection is obvious to all.

A committee was appointed to consider the whole question of medical research in Canada. Its members have a large undertaking ahead of them if they devise some adequate scheme for encouraging this work in Canada. The great problem would seem to be to provide the funds necessary for maintaining a body of workers in such a way that they will not have to build up a private practice.

The conclusion of the War called for a resolution commending the members of the profession for the good work they accomplished while in uniform. Suggestions for maintaining a permanent military medical organization were also made. These included the teaching of military subjects at the universities and the establishing of research fellowships by the Militia Department. This would seem to be the cheapest and at the same time the best method of training physicians for the duties they might be called on to perform in the event of another war.

The question of maintaining a permanent medical force for Canada should be carefully considered in the light of the experience gained during the present war. Raising the rates of pay to the scale in force in the R.A.M.C. will not be sufficient to attract the better class of medical men to undertake this work. Even if it did, they would soon deteriorate into inferior men after a few years of army life.

The splendid record made by militia medical officers in the senior positions would suggest the possibility of training the officers at the universities by means of post-graduate courses. They should be compelled, however, to maintain their efficiency as medical men by the struggle for existence in private practice.

ERRATA

THE Editors beg to call attention to two serious typographical errors which occurred in the editorial columns of recent issues of the JOURNAL.

In the July number in an editorial note (page 650) notice is taken of the very handsome donation of Sir John Eaton to the medical department of Toronto University, and associated with this notice our desire was to call attention to the appointment of Dr. Duncan Graham to the Chair of Clinical Medicine as a full-time professor. In the article as printed, the word "full-time" was unfortunately omitted and the sentence read "to the first professorship in Clinical Medicine." Our readers doubtless all noticed the mistake, for the Chair of Clinical Medicine at Toronto has been in existence since 1887, and has been ably filled, first, by the late Dr. J. E. Graham, and after his decease by Dr. Alexander McPhe-dran who only resigned last year. The JOURNAL, while apologizing for the error, again desires to congratulate Toronto University on the important advance in medical teaching in Canada of the full-time professorship in Clinical Medicine.

In the September number another error was made in a brief editorial on the Deputy Minister of Health, in which the name of Colonel John McCullough was unfortunately substituted for that of Colonel John A. Amyot by a mistake of the copyist.

We also desire to call attention to the important letter published in this issue from the Dean of the Faculty of Medicine, Queen's University.

The new Editorial Board, which with this number takes control, regrets extremely the occurrence of these misleading statements. The Acting Editor, Dr. Maude Abbott, who during the past four years has laboured enthusiastically in behalf of the JOURNAL, and, up to the present without any remuneration, lay seriously ill in the Royal Victoria Hospital.

Others who would have prevented such mistakes appearing were out of town. The new Editorial Committee will see to it that no such unfortunate statements occur again.

THE new Federal Health Department has already taken over the Department of Quarantine, formerly administered by the Department of Agriculture, but more recently under the Department of Immigration. The new department has also taken over the medical branch of the immigration service; the administration of the Adulteration of Foods Act, and the Proprietary and Patent Medicines Acts formerly administered by the Department of Trade and Commerce. These changes include the transfer of the staffs of these departments to the Health Department.

Dr. Amyot, the deputy minister of health, is taking up with the health authorities of the province, plans for co-operative action in combatting venereal diseases, and matters affecting the health of the people generally. The minister has intimated that shortly the plans of the department will be sufficiently advanced to permit of a definite announcement as to its policy and proposed activities.

THE increase in the consumption of opiates in Canada last year was so marked that the Government has considered it necessary to impose restrictions on such imports. They may now be brought in only by license.

In 1918 a total of 12,471 pounds of crude opium was imported, while in the fiscal year ended March 31st, of this year, it had jumped to the total of 34,263 pounds. Of powdered opium, 51 pounds was imported in 1918, and 123 in 1919. The value of the crude opium brought in in 1918 was \$148,346, in the recent fiscal year it was \$534,555.

Much the same situation obtains in regard to cocaine and morphine. A total of 4,705 ounces of cocaine was imported in 1918. In the last fiscal year it had jumped to

12,333 ounces. Of morphine the 1918 figures were 27,520 ounces, and this year, 30,087.

Under the regulations which it has been found expedient to adopt, the application must state the name of the importer, the intended destination, and the use to which it will be put. Officially, no cause is assigned for the marked increase in consumption. There are various theories. One of them is that people, unable to get liquor, may be turning to dope.

Correspondence

September 12th, 1919.

To the Editor:

Sir:—In the September number of the JOURNAL, under the heading "Medical Schools" the statement is made that the clinical work of Queen's Medical College will eventually be transferred to Ottawa.

You will please contradict this in the next number. The proposition has not even been formally discussed by the authorities at Queen's, so that the announcement is at least premature.

On behalf of the Faculty of Medicine, I also deny the second part of the statement that "the small population of Kingston makes the clinical supply inadequate". The hospitals of Kingston serve a large district of Eastern Ontario and are unable to receive all the patients applying for admission. Plans are far advanced for the rebuilding and enlargement of the General Hospital, and over one hundred thousand dollars of the money required in the bank.

As a matter of fact there has been for some time past adequate clinical material for the purposes of the Medical School; indeed there has been more material than could be used.

Yours etc.,

J. C. CONNELL, Dean.

The Editors regret very much that the item to which the above letter refers found insertion in the news columns of the JOURNAL.

The Association

RESOLUTIONS ADOPTED AT THE ANNUAL MEETING OF THE ASSOCIATION AT QUEBEC, JUNE, 1919

ON ARRANGEMENTS FOR MEETING OF EXECUTIVE COUNCIL BEFORE MEETING OPENS AND THE EARLY PRESENTATION OF ALL RESOLUTIONS

Resolved:

"That the Executive Council request that the Committee of Arrangements for next year be instructed to provide an opportunity for the first meeting of the Executive Council on the day before the meeting proper begins. It further recommends that all resolutions to be submitted at the meeting of the Association be typewritten in duplicate and in the hands of the Secretary in time for presentation at this first meeting of the Executive."

ON THE SELECTION OF A DEPUTY MINISTER OF HEALTH

Resolved:

"That the Executive Council be instructed to communicate with the Government and express the willingness of the Canadian Medical Association to co-operate with the Government in the selection of the Deputy Minister of Health, if such co-operation be desired."

RESOLUTION OF APPRECIATION ON THE ESTABLISHMENT OF A FEDERAL BOARD OF HEALTH

Resolved:

"That the Canadian Medical Association at this, its fiftieth annual meeting, held June 25th to 27th in the city of Quebec, desires to place upon record its appreciation of the action of the Government in placing upon the Statute book a bill for the creation

of a Department of Public Health. The Association has for many years by resolution and by deputations endeavoured to impress upon the Dominion Government the desirability of such legislation."

ON MEDICAL RESEARCH

Resolved:

"That the Canadian Medical Association, being desirous of encouraging in every way possible the spirit of medical research in Canada, either by individuals or institutions, hereby appoint a Committee consisting of Drs. Vallée, Meakins, Mader, with the mover and seconder, to consider the whole question of medical research in this country, and to suggest after full inquiry the lines on which it may be best developed, and to report to this Association at its next annual meeting."

ON CANADIAN PENSIONS

Resolved:

"That the Canadian Medical Association state to the Prime Minister its opinion (1) that Canadian Pensions Law should be administered with the utmost consideration for those whom it benefits; (2) that, unless they can be disproved, a pension claimant's statement of his condition is to be accepted; (3) but that no pension should be paid for disabilities which the best medical opinion asserts could be removed, if the applicant for pension would consent to receive reasonable treatment by simple and undangerous methods."

ON THE ORGANIZATION OF THE PROFESSION OF THE DOMINION

Resolved:

"That the Executive Council be asked to appoint a special committee to assist in and to further a more complete organization of the profession of the Dominion, through the medium of the Provincial Associations, now constituted, and others, whose organization should be encouraged."

ON POST GRADUATE COURSES FOR MEMBERS OF THE
PROFESSION

Resolved:

"That the Committee on Medical Education be instructed to investigate the possibility of providing University Extension Post-Graduate Courses for members of the profession in various local societies, and to report on the question at the next meeting of the Association."

RE CANADIAN ARMY MEDICAL SERVICE

Resolved:

"That the Canadian Medical Association take this opportunity, the first after the cessation of hostilities, to record its deep appreciation of the sacrifice made by our profession in Canada during the long war which has just ceased. We are proud to think that no class in Canada has done more to show its patriotic and sound citizenship than the medical men. It is with deep feeling that we offer our sympathy to the relatives of those medical men who have so nobly given up their lives for their country, and to those who have sustained wounds and loss or deterioration of health as the result of war service. We feel that the medical officers, nursing sisters and the rank and file of the Canadian Army Medical Service by their patriotic and self-sacrificing devotion to duty have contributed in a large measure to the winning of the war, and have reflected great credit on Canada.

"It is evident that even though the war is now over, a permanent army medical organization must be maintained, and the following suggestions are offered in order that we may profit by the experience gained in this war.

"1. That a course be given in each Canadian Medical College on such subjects as medical history of the war, military sanitation, military medical organization, etc.

"2. That a research fellowship be established by the Militia Department in each medical college in Canada, for graduates who show special aptitude for such work, and that provision be made for their accommodation in the National Health Laboratory, which, we understand, is to be established in the Federal Department of Public Health.

"3. That the rate of pay of the medical men of the permanent

army medical service be put on a par with the R.A.M.C., in order to attract the better class of medical men to the Canadian Medical Service.

"4. That these and other suggestions for the improvement of the Canadian Army Medical Service be referred to a Committee constituted as follows: Presidents of the Canadian and Provincial Medical Associations; one member nominated by the Faculty of each medical college in Canada, and the following officers:

Brigadier-General A. E. Ross, C.B., C.M.G.....	Kingston
Colonel C. Peters, D.S.O.....	Montreal
Colonel J. D. Courtenay.....	Ottawa
Lieutenant-Colonel F. H. Mewburn, O.B.E.....	Calgary
Lieutenant-Colonel F. McTavish.....	Vancouver
Lieutenant-Colonel S. W. Prowse.....	Winnipeg
Lieutenant-Colonel Charles Hunter.....	Winnipeg
Lieutenant-Colonel Clarence Starr.....	Toronto
Lieutenant-Colonel J. Hayes, D.S.O.....	Halifax
Lieutenant-Colonel Munroe.....	Saskatoon
Major Harry Morell.....	Quebec

and the mover and the seconder of the resolution; and that this Committee be given power to add to its numbers.

"A copy of this resolution and the report of the Committee be forwarded to the Prime Minister of Canada."

ON INSTRUCTION ON NURSING BY CORRESPONDENCE

WHEREAS, the Canadian Medical Association realizes the importance of the nursing profession to the public as well as to the medical profession, and believes that knowledge and skill are essential qualifications that can be attained only by training in some recognized nursing school in connection with a hospital, and only after a prolonged course;

Resolved:

"That this Association deprecates the education of nurses by the correspondence system and, further, would caution the public and the profession against the employment of nurses trained in this very incomplete and superficial manner."

ON INFANT MORTALITY AND CAMPAIGN IN CHILD WELFARE

Resolved:

"That this Association recommend to the Minister of the Federal Department of Health the careful consideration of the important question of infant mortality, and the carrying on of an educational campaign in maternity and child welfare, so as best to serve the requirements of the several provinces of the Dominion."

THE figures lately presented by Dr. Grimberty, Professor of the Ecole Supérieure de Pharmacie de Paris, to the Académie de Médecine are instructive. Following the ancient and laudable tradition of the Chair, he gives a table of the drugs supplied to the pharmacy of Hospitals from the year 1907 to 1917 inclusive. It is not absolutely complete because in a few cases he has been obliged to stop at 1914, the outbreak of the war having made the importation of certain foreign drugs difficult or impossible. The list records the new drugs in use at the present time, and also shows the old ones that are still retained. Among those used most frequently and in the greatest quantity appear rhubarb, senna, salts of soda and magnesia, bismuth, silver and antimony; the consumption of these has hardly varied during the last twenty years. Then come others equally well known, including different preparations of opium and quinine, cod-liver oil, sulphur and the iodide and bromide of potassium, but these are now supplied in half, or less than half their former quantity. Others, like cantharides, once much in use for blisters and other purposes, have pretty well ceased to be administered; while yet others, among which are caffeine and theobromine, have either recovered their former popularity or have been steadily mounting in favour. This is particularly the case with theobromine, the consumption of which in the Parisian hospitals has increased from 28 kilos in 1896 to 175 kilos in 1914. Among external remedies of this class, the different preparations of iodine are notable, as is mustard flour, the quantity of both having doubled during the sixteen years.

Canadian National War Museum

DESCRIPTION OF A SERIES OF WAX MODELS MADE BY MAJOR
LESSORE FOR THE CANADIAN GOVERNMENT AT THE
CANADIAN HOSPITAL AT ORPINGTON, KENT

THE collection of wax models comprises both facial and general surgery cases, though the majority of the latter are not considered quite suitable for wax models as all the information that these are intended to convey can be given by simpler means, such as a plaster cast, photograph, x-ray photograph or drawing.

In the case of facial injuries, however, certain elements that do not have to be considered in general surgery call for more perfect and elaborate illustration. In a facial defect there is not only the functional question to consider, but also and above all, the plastic question, or question of appearance, which necessitates the adoption of a means of expression which can adequately render the exact appearance of the human face. There are, therefore, not only the surface contours of the features and their relation to one another, but such elements as the transparency of the skin, the colour, texture and opacity of the wounds and scarred tissue, the differentiation between clean and hairy skin, and between normal skin and the surface left by a healed wound that have to be taken into account and reproduced, if one is to give an exact representation of the condition of a patient before and after his operation.

During the war there has been an opportunity such as never would occur in time of peace, for the study and development of plastic surgery in all its branches. In civil life there are not enough cases to keep a surgeon confined to this special class of work, whereas in war the surgeons were able to concentrate many cases of a similar kind in one hospital and pursue the study of the work together. This enabled them to rapidly judge which operations gave the best results and by concerted action obtain better results than could have been achieved by dealing with the problems in a piecemeal and haphazard way.

It may not be true to say that any remarkable discoveries or inventions have taken place, but on the other hand it can with justice be claimed that from small beginnings and tentative experi-

ments the most remarkable developments have taken place, developments that would greatly have surprised the surgeons of only a few months earlier. It is in order to accurately register these developments when they take place and record the methods by which they were obtained that the system of recording the results by wax models was introduced. In this way it is hoped that the information gained through the war may never be lost to succeeding generations of surgeons.

It is intended that the collection of wax models and other records of the work done by the Canadian Army Medical Corps shall be ultimately housed in a permanent exhibition in Ottawa, but in order to render them more accessible to the universities and medical institutions throughout the Dominion, it is proposed that duplicates will be made available for these institutions on their application and at their expense.

Colonel Armstrong of McGill University obtained the grant from the Canadian Government by means of which his project of establishing this elaborate system of records could be financed. On his recommendation, Major Lessore, the sculptor, was appointed to take charge of the work and a laboratory was established at Orpington, where the greater number of the Canadian facial cases was being treated at that time. Shortly afterwards the majority of the facial cases was concentrated at Queen's Hospital, Sidcup, which became a general centre for this work and included besides the Imperial and Canadian patients, those from the other Overseas Dominions. The laboratory, however, remained at Orpington, but its staff was made mobile and able to follow the work in all other hospitals.

The collection, as far as it is completed, will probably be ready for shipment to Canada during the summer, the unfinished models will not, however, be sent to Ottawa. It is proposed that they should be sent to Montreal, where the new facial hospital is being established, and where the laboratory will be transferred. A large number of the models was exhibited in London at the Royal College of Surgeons in 1918. The exhibition was opened by Sir Robert Borden, and being the most comprehensive of its kind, aroused much interest. Since their removal the models have been improved and the collection greatly increased by the addition of other interesting samples.

REPORT ON MATERIAL RECEIVED FOR THE CANADIAN NATIONAL
WAR MUSEUM FROM THE ROYAL COLLEGE OF
SURGEONS, LONDON

A Report has been presented to the Director-General of Medical Services, Ottawa, by Captain Morton E. Hall, C.A.M.C., on the Museum material being received and mounted for the Canadian National War Museum in the Preparation Department of the Medical Museum of McGill University, which has been made the depot for the reception and preparation of this material pending further arrangements. The report embodies the following facts:

Arrival of Material from England.

Sixty-three boxes of museum material have been shipped from the Royal College of Surgeons, England, to Canada, consisting of wet pathological specimens, macerated bones and several cases of captured German medical war accessories as splints, drugs, bandages, etc.; these cases contained all material available in England for Canadian Medical Museum purposes. Thirty Canadian specimens, included in the National collection at the Royal College of Surgeons were retained by the Imperial authorities and an equal number substituted from the National collection.

Classification of Canadian Medical Museum Material.

The material may be divided roughly into three classes, viz:

1st. Macerated bones. 2nd. Wet specimens illustrating gun-shot wounds and action of poisonous gases on the tissues, and 3rd. Wet specimens illustrating ordinary clinical diseases that the Army Medical Officers were called upon to treat.

Disposition of Specimens

Macerated Bone Specimens.

The collection of macerated bones, approximately two hundred in number, is a very complete, valuable and instructive one, illustrating all varieties of gun-shot injuries and more particularly the associated processes of repair and infection. These specimens, in the years to come, must be of great value to the future Canadian war surgeon and more particularly will be of great value in the

teaching of clinical surgery and pathology. It is suggested that the whole collection should be assembled in the Museum Building at Ottawa, and be made available for teaching purposes by the several Medical Colleges of Canada, and that they be kept together as a unit.

Wet Specimens showing Gun-Shot Injuries, etc.

This second group comprises approximately three hundred specimens, of which two-thirds will be valuable for Museum mounts. In this group there are many duplicate specimens, particularly those showing the action of poisonous gases. Those that are not used for the Canadian War Museum should be used to furnish a series to each of the Medical Colleges in Canada.

Wet Specimens showing Ordinary Lesions.

This group is a representative one, illustrating the diseases, aside from wounds, which the Army Medical Officer was required to treat. It is suggested that the best of these be mounted largely for their historical value rather than for any value for teaching purposes.

At the present time, a large number of specimens are ready for mounting, but this has been delayed on account of shortage of museum jars. Approximately seventy-five wet specimens have been mounted.

Conclusion.

The collection when finally assembled at Ottawa will form an excellent nucleus for the future Canadian National Medical Museum. It is suggested that the wet specimens, which are of relatively little value for elementary teaching be loaned to Medical Conventions and Societies, and that the macerated bone collection be made available, wherever possible, for the teaching of Medical Science, every care being taken, however, to preserve specimens from injury in transit.

Obituary

DR. R. J. GIBSON

DR. R. J. GIBSON, the well-known physician and surgeon of Saulte St. Marie, died suddenly on the morning of August 6th. Death came as the result of heart failure. The deceased was widely known throughout the medical profession of Ontario, and was recognized as one of the foremost surgeons of the province. In 1913-14, he was president of the Ontario Medical Council. He was a graduate of McGill University, finishing his medical course in 1891, and afterwards spending a year in Edinburgh University. At the commencement of his professional career the late Dr. Gibson was associated with Dr. Gunn in Clinton, Ontario, afterwards taking the appointment with the C. P. R. for the Chapleau Division. He came to the Sault in 1894. He was identified in a marked degree with the public and social life of the city, more particularly the General Hospital, where he was the head surgeon and recognized as a most efficient physician. He was the chairman of the High School Board for the past two years, and devoted much time and energy to the educational interests of the community. He was also on the military board of medical examiners from 1906 to the end of November, 1918. Dr. Gibson leaves a widow and young son, his eldest son having predeceased him a year ago. He was a member of the Anglican Church, and in fraternal circles a member of the Masonic Order.

DR. J. D. R. WILLIAMS

One of the oldest medical practitioners of the united counties passed away recently in the person of J. D. R. Williams, M.D., of Ontario. He was in his eighty-seventh year.

For over forty years he practiced medicine in Cardinal, where he died at his residence in that town. During the historical times of the Confederation he took an active part in political life, reporting the proceedings of the first Provincial Parliament in Ontario. He took a great interest at all times in public affairs. The late Dr. Williams was twice married, and leaves a widow and nine children.

Miscellany

News

THE WESTERN PROVINCES

THE quarterly meeting of the Central Council of the Canadian Red Cross was arranged to take place in Winnipeg on September 9th. The judgement of the London War Committee, composed of keen Canadian business men in England, has been of inestimable value in connection with the hospital-demobilization and, as a result, the Society has realized over £49,000 up to the end of June. In addition to the shipments made to Canada, the expenses attached to the packing and shipping is very great. The supplies will be distributed in all the provinces of the Dominion, and will be used to equip the district and municipal hospitals which the Canadian Red Cross Society hopes to assist the Government health bodies to open in different parts of the country.

At the recent convention of the Sanitary Inspectors' Association of Western Canada, E. W. J. Hague, assistant Chief Sanitary Inspector of Winnipeg, introduced the discussion of the housing scheme which now occupies the attention of the Dominion, provincial and local governments. He urged the health inspection of newly constructed houses before occupation, and quoted freely from sanitary reports in Great Britain, Canada and the United States. The American Government spent nearly \$100,000,000 on housing during the War.

A vote of thanks was given Mr. Hague at the close of the meeting for the manner in which he had presented the subject.

THE provincial laboratory of the University of Alberta is conducting a special course in public health nursing for registered nurses who are going to carry out school inspection and child welfare work. The provincial board of health has undertaken the arrangement of the course this year. Next year it will be conducted by the University of Alberta. Two months were to be devoted to lectures and demonstrations in child welfare work

school inspection, pre-natal care, care of the mentally defective and general health nursing work. The nurses are to be brought in later in the year to complete the course. A special welfare nurse from the public nursing training school at Seattle will give a special course in child welfare. Four nurses have already graduated in this work and have been assigned to different centres where they carry on baby welfare instructions week ends, and in the meantime make excursions through surrounding districts to the children in the different schools. This is the inception of the new health work under the department created this session with Hon. A. G. Mackay, minister of health and municipalities in charge.

The province is providing in addition, a special course in obstetrics for nurses who will agree to work in outlying districts. For this purpose an item of \$30,000 has been passed in the health estimates. While no provision has yet been made for it, Mr. McKay hopes that ultimately a plan will be worked out to provide persons to look temporarily after settlers' homes in outlying districts, when the mother is sent to a maternity hospital.

It is expected that by the first of September the demand for public health nurses will be far in excess of the number who have taken the special course at the university. A suggestion by the minister of health is being readily accepted, namely, that the question of school inspection by public health nurses should be linked up with the district hospital scheme, and the ratepayers allowed to vote on the same. This plan would much simplify and cheapen the whole work of inspection.

THE Western Canadian Sanitary Inspectors' Association opened its eight annual convention in Saskatoon on August 1st. The meeting was marked by the presence of civic officials, delegates from Ontario, Manitoba, Saskatchewan, and Alberta, and experts upon subjects incident to sanitary improvement. The convention was formally opened by President Arthur Kingley, of Winnipeg, who gave a brief outline of the progress made by the Association since its inception in Regina in April, 1912. At that time a temporary constitution was drafted and officers chosen. The membership of the society now numbers sixty-three, but at one time numbered eighty-four. At the outbreak of the War, twenty-two members enlisted in the army, five of the number making the supreme sacrifice.

Mr. Kingley urged upon each of the members of the association to bring pressure to bear upon their legislators the necessity of

legislation which would be conducive of good sanitation. He believed the Federal Minister of Health should be a cabinet minister, for such an official would assist in the curtailment of communicable diseases throughout the Dominion. Dr. Arthur Wilson, Medical Health Officer, Saskatoon, urged better co-operation between the health officials and ratepayers, which would, he affirmed, rebound to better conditions in every city and town. He urged that the local health officers get in closer touch with inhabitants of towns or cities in order that the public in general may be better educated in measures which will prevent communicable diseases. The convention lasted two days.

A WARNING to the people of Saskatchewan has been issued to effect safeguards against typhoid fever, in view of the fact that a number of cases of the disease is being reported from various parts of the province.

DR. M. M. SEYMOUR, Commissioner of Public Health, announces that a number of typhoid carriers are coming into the province at the present time, and it is essential that people should protect themselves by means of vaccination. The department is distributing vaccine free to physicians. Its use has eliminated typhoid from the armed forces of Europe, and America, and civilians should adopt the same measures to protect themselves. The department sent out a number of inspectors to see that railway and other construction gangs were vaccinated.

THE nineteenth annual meeting of the Canadian Association for the Prevention of Tuberculosis will be held at the Chateau Laurier, Ottawa, on Thursday, October the 9th. The address of the evening will be delivered by Dr. John B. Hawes, of Boston, and a good programme is promised for the day sessions. This is open to the public.

ARMY MEDICAL SERVICES

IN the latest French Honour list the Croix de Guerre was awarded to Major Burnet E. Kelly, M.D., C.A.M.C.

THE Croix de Guerre has been awarded to John Kennedy, David Levesque, Stanley H. Hiskiman, Medicals, all of the C. A.M.C.

DR. F. N. G. STARR, of Toronto, has received the decoration of Commander of the Order of the British Empire.

MAJOR D. A. CLARK, M.D., after five years of continuous service overseas, has been appointed to the staff of the Military Neurological Hospital at Vancouver.

COLONEL W. B. HENDRY, D.S.O., has been appointed associate professor of obstetrics and gynæcology in the University of Toronto.

THE Indian Government has offered a grant of \$2,000 towards the erection of a hospital as a memorial to the soldiers of India who laid down their lives in large numbers for the Empire in the late war. Canada has been challenged to raise \$3,000. The Canadian Auxiliary, which supports the Canadian hospital at Nasik, near Bombay, has cabled to the Home Office accepting the challenge.

THE League of Red Cross Societies just organized embraces representatives of Great Britain, France, the United States, Italy and Japan, who met at Cannes, France, in April. The Canadian Red Cross Society was at once invited to become a member of the League, irrespective of its affiliation with the British Red Cross Society. One provision for membership is that the Government of the country shall recognize the objects of its national Red Cross organization, and in the case of the Canadian Society, on the very day news of the League and its objects were cabled abroad, the Central Council, at its quarterly meeting in Toronto, changed the wording of its proposed amendment to its charter to comply with the wording of Article 25 of the Covenant of the League of Nations. The passing of the bill by Parliament, which made this amendment law, placed the Canadian Society on equal footing with the various national organizations comprising the League.

As the situation now stands, the Canadian Red Cross Society "may also carry on activities in time of peace or war for the improvement of health, the prevention of disease and the mitigation of suffering throughout the world" within its own Dominion, and as an accredited member of the League of Red Cross Societies must bear its share of responsibility in the same world-wide purpose. An opportunity for proving the usefulness of such an international organization was demonstrated almost immediately in the typhus

epidemic in eastern Europe. In the suppression of this disease the International Red Cross is uniting with the Supreme Economic Council.

Appointments:

Captain, Acting-Major John Cotton Maynard, is posted for duty under the A.D.M.S., military district No. 2.

Colonel Arthur Evans Snell, C.M.G., D.S.O., military district No. 3, is posted for duty temporary in the directorate of the D.G.M.S., Militia Headquarters, Ottawa, July 24th, 1919.

Captain Lewis Mark Morton is posted for duty under the A.D.M.S., military district No. 6.

Captain Charles Vincent Scott is posted for duty under the A.D.M.S., military district No. 2.

Captain George Frederick Sykes, is posted for duty under the A.D.M.S., military district No. 1.

Colonel John George Adami, is posted for duty in the directorate of the D.G.M.S., Militia Headquarters, Ottawa, June 28th, 1919.

Major Thomas Lyon is posted for duty under the A.D.M.S., military district No. 11.

Captain James Garfield Munro is posted for duty under the A.D.M.S., military district No. 1.

Captain Milton Arthur Aittick is posted for duty under the A.D.M.S., military district No. 1.

Captain Richard Harvey Angrove is posted for duty under the A.D.M.S., military district No. 3.

Lieutenant-Colonel Archibald Lorne Campbell Gilday is posted for duty under the A.D.M.S., military district No. 4.

Major Allan Martindale Yates is posted for duty under the A.D.M.S., military district No. 1.

Quartermaster and Honorary Captain James Brown McKay is posted for duty under the D.G.M.S., Headquarters, Ottawa, July 23rd, 1919.

Book Reviews

A TEXT-BOOK OF PRACTICAL THERAPEUTICS. With especial reference to the application of remedial measures to disease and their employment upon a rational basis. By HOBART AMORY HARE, M.D., B.Sc., professor of therapeutics, Materia Medica, and diagnosis in the Jefferson Medical College of Philadelphia. Seventh edition, 1,023 pages, enlarged, thoroughly revised, and largely re-written; illustrated with 145 engravings and 6 plates. Price \$5.50. Publishers: Lea & Febiger, Philadelphia and New York, 1918.

"The object of this book is to place the subject of treatment before the reader so that it may be applied at the bedside in a rational manner." With this sentence the book opens, and it may be remarked at once that that object is completely attained. This is an eminently practical work. The following sections with which this treatise deals will show how comprehensive it is:

General therapeutical considerations, drugs, remedial measures other than drugs, feeding the sick, treatment of diseases, index of drugs and remedial measures, index of diseases and remedies.

We cannot see that such diagrams as those on pages 100 and 110 teach anything; if reflex action is understood they are superfluous, if not understood, they are not nearly sufficient.

The excellent discussion on the therapeutic use of alcohol should have been in a section by itself rather than merged in that on typhoid fever. Much more should have been said on katephoresis and sciatica. The statement that, "the local treatment of sciatica is quite various," we understand, but it is not English.

ESSENTIALS OF SURGERY. A TEXT-BOOK OF SURGERY. For Student and Graduate Nurses and for those interested in the Care of the Sick. By ARCHIBALD LEETE McDONALD, M.D., The Johns Hopkins University. 265 pages with illustrations. Price \$2.00. Publishers; J. B. Lippincott Company, Philadelphia, London and Montreal, 1919.

This is an interesting elementary treatise not so much on surgery itself as on the anatomical, physiological and bacteriological

principles to be mastered before any surgery could be accomplished. It is rather a series of talks about surgery than a text-book of surgery. There is no tendency to avoid technical terms so that the glossary supplied is quite necessary.

The diagram on page 102 of the great lymph-spaces in and around the central nervous system is quite instructive; but the diagram of the spinal cord on page 111 is poor.

It is most misleading to call the spinal cord a part of the peripheral nervous system as is done on page 98.

What is to be understood by "Rolando projection" as applied to the cerebral cortex (page 99), and "who is Sylvia" (page 99)?

THE JOHNS HOPKINS HOSPITAL REPORTS. VOLUME XVIII, FASCICULUS II. Annual Report of the Department of Pathology of the John Hopkins University and Hospital. Price \$3.50. Publishers: The Johns Hopkins Press, Baltimore, 1917.

Of the twenty-seven papers in this volume, no less than eleven are physiological. Some of these latter are representative of work on such modern problems as the inter-relation of the surviving heart and pancreas of the dog in sugar metabolism; the mechanism of absorption from the colon; fat in cardiac and other muscles; and the metabolism of cells in vitro.

In all the researches, physiological and pathological, the literature cited is very full, and the illustrations throughout the volume can only be described as magnificent.

The expression, "gross specimen", is an objectionable ellipsis for, "naked eye appearance of the specimen".

MILITARY SURGERY OF THE EAR, NOSE, AND THROAT. By HANAU W. LOEB, M.D., Major, Medical Reserve Corps, U.S.A. Price \$1.25. Publishers: Lea & Febiger, Philadelphia and New York, 1918.

This is a very valuable manual on account of the large amount of clinical material it deals with, afforded by experience in the late war. It has all the evidences of knowledge acquired at first hand; it is by an expert for experts.

D. FRASER HARRIS

Books Received

THE following books have been received and the courtesy of the publishers in sending them is duly acknowledged. Reviews will be made from time to time of books selected from those which have been received.

A MANUAL OF EXERCISES FOR THE CORRECTION OF SPEECH DISORDERS. By MAY KIRK SCRIPTURE, B.A., instructor in speech, Columbia University, and EUGENE JACKSON, B.A. 236 pages, illustrated. Price, \$2.00 net. Publishers: F. A. Davis Company, Philadelphia, 1919.

ROENTGEN INTERPRETATION: A MANUAL FOR STUDENTS AND PRACTITIONERS. By GEORGE W. HOLMES, M.D., roentgenologist to the Massachusetts General Hospital, and HOWARD E. RUGGLES, M.D., roentgenologist to the University of California Hospital. 211 pages. Illustrated with 181 engravings. Price, \$2.75. Publishers: Lea & Febiger, 706 Sansom St., Philadelphia, 1919.

APPLIED ANATOMY AND KINESIOLOGY. By WILBUR PARDON BOWEN, M.D., professor of physical education, Michigan State Normal College, Ypsilanti. Second edition, thoroughly revised. 334 pages. Illustrated with 197 engravings. Price, \$3.50. Publishers: Lea & Febiger, 706 Sansom Street, Philadelphia, 1919.

GYNOPLASTIC TECHNOLOGY. With a chapter on SACRAL ANÆSTHESIA. By ARNOLD STURMDORF, M.D., clinical professor of gynæcology, New York Polyclinic Medical School. 334 pages, illustrated. Price, \$5.00 net. Publishers: F. A. Davis Company, Philadelphia, 1919.

THE PRINCIPLES OF NURSING. By CHARLOTTE A. BROWN, R.N., superintendent of nurses in the New England Hospital for Women and Children. 261 pages. Illustrated. Price, \$1.75. Publishers: Lea & Febiger, 706 Sansom Street, Philadelphia, 1919.

The Canadian Medical Association

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